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PAPER TRADE JOURNAL

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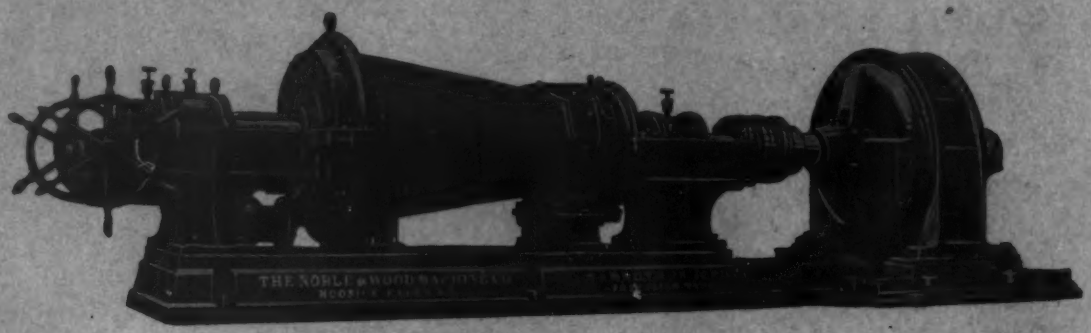

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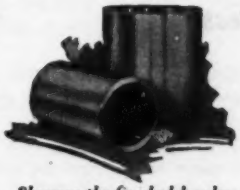

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALME' PRESIDENT | GEO. S. MACDONALD VICE-PRESIDENT & TREAS | F. K. HOPPIE SECRETARY

19 EAST 39TH ST. N.Y. U. S. A

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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXI. No. 3 — Thursday, July 16, 1925

The Magazine of the Paper Industry

New Capital Invested in Canada's Paper Industry

Capital Was Attracted During 1924 at The Rate of $3,500,000 a Month—Dominion Bureau of Statistics Issues Some Interesting Figures—Privy Council in London Dismisses Appeal of Ticonderoga Pulp and Paper Co.—Spanish River Mills to Erect 200-Ton Mill at Fort Alexander —Development of 600,000 H.P. at the Fall Approved

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 13, 1925.—An average of about $3,500,000 per month of new capital, or a total of $41,846,018 for the year, was invested in the pulp and paper industry in Canada during the year 1924. This was an increase of over 10 per cent—a total standing at the end of the year of $459,457,696 as compared with $417,511,678 in 1923. These figures are given in the report on the industry just issued by the Dominion Bureau of Statistics. The report states also that the number of employes in the industry was 27,657, with a pay-roll of $37,649,488 for the year.

That the industry is growing in the number of units in operation is shown by the total of 115 mills compared with 110 at the end of 1923. Of these mills, 46 are engaged in the manufacture of pulp only; 34 combine pulp and paper, and 35 manufacture paper only.

An easing off in prices of pulp occurring during the year cut down the total value of the pulp manufacturer from $99,073,203 to $90,323,972, while the tonnage dropped slightly from 2,475,904 to 2,465,011 tons. The extent of the drop in price is indicated by the fact that there was a reduction of 8.8 in value and only 4-10 of 1 per cent in quantity.

News print made up 80.8 per cent of the paper manufactured during the year and showed a gain of 136,500 tons, being up from 1,251,541 tons to 1,388,081 tons, while the value, even with the reduction in the price, increased from $93,213,340 to $100,276,903. Thus the gain in quantity was 10.9 per cent and in value 7.6 per cent. As the production in the United States during the same period was only 471,000 tons, Canada came within 100,000 tons of being the largest news print producer in the world.

Wins Big Law Suit Against Ticonderoga

The Privy Council in London, which is the final Court of Appeal for the British Empire, has just dismissed the appeal of the Ticonderoga Pulp and Paper Company in the litigation arising out of certain purchases of Riordon stock made by the brokerage firm of McDougall & Cowans, Montreal, for the Ticonderoga Company. The amount claimed by McDougall & Cowans was $234,765.88, based on four notes, all dated April 22, 1921, and due two, three, four and five months after date, given by the Ticonderoga company for the purchase of Riordon stock for that company, which had been authorized by two officers of the company. Such purchases had been made over a considerable period previous to above obligation and had in each and every case been ratified by the directors of the Ticonderoga company, which while not a subsidiary of Riordon, had almost the same directorate. When the Riordon difficulties arose in 1921, the above notes were repudiated by those who were in the direction of the Ticonderoga company, who claimed that the purchase of stock for which the notes had been given was improper, illegal and beyond the powers and legal capacity of the company, adding that the purchases were neither authorized nor ratified by the company nor its directors but was made without their knowledge or consent. The action of McDougall & Cowans to recover the indebtedness was dismissed by Justice Duclos of the Superior Court, Montreal, but upon appeal being taken by the above-named brokerage firm to the Court of Appeals, the judgment was reversed and the action maintained for the amount sued for. The cable advice from England states that the appeal of the Ticonderoga company was dismissed without counsel for the respondent having been called upon.

Work Starts on Paper Mill

The following despatch has been received from Winnipeg: "The best bit of news Winnipeg has received for years," was Mayor Webbs' comment on receiving the announcement that the Spanish River Pulp and Paper Mills had decided to build immediately a 200 ton paper mill at Fort Alexander. "The fact that such a mill will cost between four and five million dollars, practically all of which will be spent locally," he continued, "is an absolute godsend, in view of the unemployment situation." The announcement of the plans of the Spanish River Company was made by George R. Gray, vice-president of woods operation for the company. The construction of the mill, according to him, will commence just as soon as the engineers of the company had prepared their plans, and he also intimated that the Canadian National Railway had met the company half way in agreeing to construct a spur line to Fort Alexander from Winnipeg Beach immediately. As it is anticipated that this spur line can be completed inside of a few weeks, construction work can be proceeded with right away.

Another Huge Power Development

Approval of the development of 600,000 h.p. at the Falls known as Chute a Caron, a few hundred yards from the Grand Decharge enterprise, on the Saguenay River, has been given by the Provincial Government of Quebec, according to an official announcement made by Premier Taschereau. The agreement was made with interests including J. B. Duke and E. H. Davies, prominent men in the industrial life of the United States. Between $75,000,000 and $90,000,000 will be expended on power development and the construction of a plant for the manufacture of aluminum, it was stated by Aime Geoffrion, K.C.

Hot-Weather Bright Spots in Philadelphia Market

Seasonal Specialties Continue Active but Various Other Grades Show Fair Volume of Trading—Keen Competition Being Shown by Bag Manufacturers—Finland Bestows Government Honors Upon N. A. Considine—Selvig Paper Co. of Camden in Involuntary Bankruptcy

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 15, 1925.—Despite the hotter weather that prevailed in the past week the Philadelphia trade held to the steady trend of improved business conditions which were noted in the closing days of the month of June. Seasonal specialties, of course, were the most active in these early days of July, but there was a fair volume of trading in the various grades that customarily are in little demand during the mid-summer months. Back of this steadier market, the trade believes, lies a firm foundation for the upward swing of business during the coming months and so the dealers are taking a more optimistic attitude towards the outlook for Fall trading in so far as the paper distribution industries are concerned.

Fine Paper Lingers in Specialized Market

Continuance of the coated and book papers to hold the lead in the active list of fine papers was the most prominent of market factors in this division of the trade. Publishers, large advertising and printing firms who just now are preparing for an active summer operation in their respective fields, are completing their stocking of supplies for the next two months when they will be at the height of production for the Fall requirements in technical, educational and other publications that are turned out in large volume during the season in this city by the nationally known firms. There is an especially active season for the next two months in the large advertising printing firms in advance of the opening of the September distribution of literature announcing the new Fall market for various textile, knitted, clothing and other commodities that are especially Philadelphia products. Several of the nationally known advertising concerns are rushed with orders for the larger industrial enterprises of the country and these all help to swell the order lists for salesmen.

News Print at Low Quotations

It is very evident that the American news print manufacturers have no fear of a foreign invasion—this to be judged by the low quotations that are being made for the 1926 deliveries in this market. During the week the trade was informed by several Canadian Mills that there will be a reduction, of ¼ cent per pound effective as of July 1, for all orders of news print now listed for delivery in 1926. This when compared with the German quotations on news print of $3.45 brings the American product below that of the Teuton manufacturers who also enjoy the advantage of importing on the "free duty" list. With the current quotation from he Canadian Mills the American producers are able to undersell the European. Of course this lowering of prices is effective only on the large tonnage orders.

Seasonable Sellers in Coarse Papers Hold

Summer specialties just now are the most sought of the coarse papers and include such specialties as cups, soda fountain and other paper wares among the sanitary or beverage container lines. While prices on these are holding steady there has been a slightly decreased quotation on a few of the grades that just now are not as active as could be desired. No 1 Kraft has been reduced ¼ cent, effective of July 1, and for immediate deliveries. This quotation comes from the Southern Mills which have been most active for the past year in introducing their brands in the Quaker City trade, and who are making these price concessions, as they state because of the lower cost of overhead in the Southern labor circles and raw material markets. Another advantage these mills are quoting along with price inducements is the low cost of water transportation along the Atlantic Coast and from the Gulf Coast ports. Butchers Fibers which recently were drastically reduced now are holding firm at the rock bottom prices. Cheaper grades of sulphite tissue have just been cut 5 per cent and a similar slash has been made in wax paper such as florists use.

Bag Makers in Keen Competition

Some of the bag manufacturers who have been resorting to what the trade terms as selling "short sizes" are now sufferers in the keenly competed markets for orders for their products. The false labeling of sizes has turned trade houses, in the general distribution of paper, against these manufacturers and they are experiencing difficulty in rounding up business. The result has been that prices are now being reduced to the minimum of cost of the paper used in their production with consequent loss in the cost of manufacture overhead. The stocks of the legitimate manufacturers, of course, are not included in the list and are holding firmly at Spring prices.

N. A. Considine, Vice Consul for Finland

Recognition of the interest and knowledge of affairs pertaining to the business, industry and commerce of Finland has been given by the Finnish Government through its Foreign Minister at Washington, to N. A. Considine, President of the Paper House of Pennsylvania, who during the week was appointed Vice Consul to that country. This announcement was made through the Consulate General in New York after the appointment was ratified by the Secretary of State in Washington. The appointment of President Considine was urged by prominent Finnish interests who recognized the special qualification of the American Vice Consul for this post through his thorough acquaintance with the pulp and paper countries of Northern Europe as well as its commercial life and its relations to American markets. Mr. Considine has spent much time in Finland, visiting the paper mills and other industrial enterprises allied with the trade and outside its domain. He has during his stay in that country formed a large circle of business associates and friends, who were instrumental in bringing before the Finnish Government his fitness for the position conferred. He is the first American to be honored by that country in its Consular Service and whose special duties will be the promotion of the commercial relations between the two countries.

Paper Trade Abandons Summer Sessions

During the hot weather there will be no weekly meetings of the Philadelphia Paper Trade Association, the usual meeting of the Fine Paper Division which was scheduled for last week having been postponed. Instead of the weekly gatherings, the coarse and fine paper groups will meet once a month during July and August. The weekly sessions will be resumed in September.

Rondow Paper Mills Offer New Product

The newest of products to be manufactured by the Rondow Paper Mills of Napanoch, N. Y., were introduced in the Philadelphia Paper markets during the week. The Rondow Mills, recently took over the former mills of the late J. B. Ramsay, at Rising Sun, Md., and here, under the management of J. N. Cochrane, there is being manufactured grease proof papers. The Rondow Mills, in New York State are now making high grade tissues in addition to other lines which it has been manufacturing as part of the Cochrane Organization. The newest of mills, those of

the old Ramsay concern, were operated for more than 25 years and are located in Cecil County, Maryland, just over the Pennsylvania border.

Welsh Paper Co. Robbed

Thieves during the week broke into the offices and warehouse of the Welsh Paper Company, S. 17th street, and after ransacking the place escaped with their booty of office supplies.

Selvig Paper Co. in Bankruptcy

P. N. Selvig, trading as the Selvig Paper Company of Camden, during the week, became involved in involuntary bankruptcy proceedings. The firm was established about a year ago by Mr. Selvig, who severed his connection with the Clinton Paper Company's sales organization to enter business on his own account, specializing in writing papers. Most of the creditors are out of town mills manufacturing writings. The liabilities are alleged to be about $10,000 while the assets are in the neigborhood of $2,500. Among the creditors is the Chemical Paper Company. A meeting of the creditors has been called for July 16 at the offices of the referee in the Security Trust Building, 301 Market street, Camden.

To Abandon Philadelphia Office

An announcement has been sent out by the New York and Pennsylvania Company, to its customers in Philadelphia and the Baltimore territory, to the effect that the company will discontinue its Quaker City Sales Office on July 15 and that in the future all business pertaining to these districts will be handled direct from the headquarters at 200 Fifth avenue, New York. The policy was in line with the plans recently adopted under the reorganization of the Company which took place on July 1. The company further announced that it will continue to manufacture Book and kindred grades of papers and wrapping specialties. The local offices have been established for the past six years and were under the management of T. C. Hanna. They are located in the Lafayette Building at 437 Chestnut street. No announcement is made of the plans of the local manager after the Philadelphia offices are closed. The company conducts mills in Lock Haven, Pa., and in other parts of the State.

News Notes of the Trade

Simon Walter, head of the firm bearing his name and a member of the City Council of Philadelphia, and head of its Transportation Committee, sailed last Monday for a two months' tour of Europe, including a round of the sight seeing places in England, France, Austria, Germany and the Slav Countries.

Tours of the mills in Northern and Central Pennsylvania and in the South are being made by representatives of the S. S. Garrett Company, 259 S. 3rd street. Alfred C. Holland, has been making the rounds of the Pennsylvania Manufacturers while H. P. Turner, who recently was made sales manager after 11 years service with the firm is looking over the Southern Mills as far as Louisiana and Texas in search of Krafts and news print.

Representative Spear of the Arbonomink Paper Company, North Delaware Water Gap, made a trip to this city and featured among the papers offered by that firm at this time, textile specialties, on which the mills are running on normal schedule.

May Protest News Print Definition

[FROM OUR REGULAR CORRESPONDENT]

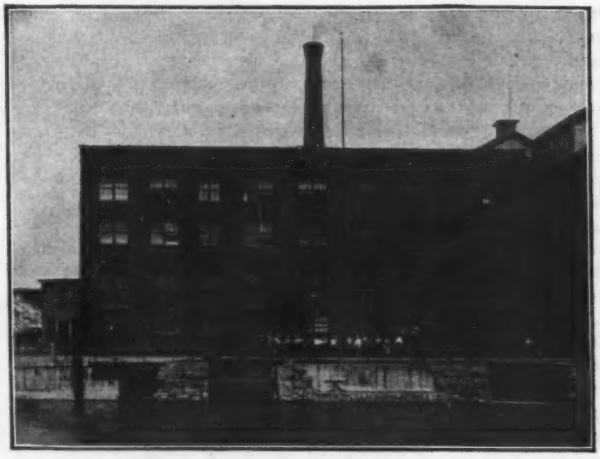
WASHINGTON, D. C., July 15, 1925.—While there is no definite information available here there are rumors that paper importers may protest the amended news print definition promulgated a couple of weeks ago by the Customs Service of the Treasury Department. If an effort should be made to have the definition rescinded, the matter would come up in the United States Court of Customs Appeals. Representatives of domestic manufacturers, however, feel, it is understood, that if the matter does get into the courts that the new definition will be sustained.

Buy Pettebone-Cataract Plant

NIAGARA FALLS, N. Y., July 14, 1925.—T. M. Uptegraff, vice-president and general manager of Niagara Wall and Defiance Paper Companies, has just announced the purchase of the plant of the Pettebone-Cataract Paper Company here.

This mill is situated in a strategic position on the brink of the Niagara Gorge, and faces the enormous Hydraulic Basin, which forms the headwaters for the generators, which produce the tremendous power created at Niagara.

The mill's equipment consists of two 90 inch Fourdrinier paper machines, three large beaters, and two Jordans, with a daily output of 35 tons of paper a day, besides a ground wood mill capable of producing 36,000 pounds of pulp every twenty-four hours.



PLANT ACQUIRED BY NIAGARA WALL AND DEFIANCE COMPANIES

This plant will be operated as a part of the Defiance Paper Company and raises the daily output of this concern to 85 tons, or—over 28 carloads a week. The operations will be under the management and supervision of the executives of the Defiance Paper Company, and will be devoted to the manufacture of the same high-grade hanging and news print stock, which has built such an enviable reputation for the two parent companies.

P. T. Dodge Resigns as Chairman and Director

Philip T. Dodge has resigned as a director of International Paper Company and as chairman of the board. The resignation was accepted by the board with great regret, terminating as it does a connection with the company which dates back for a dozen years.

When Mr. Dodge became president of the company in 1913, it had been unable for some years to pay its preferred dividends in full, and it still faced many serious problems. During his presidency these problems were successfully met, its plants were rehabilitated, the new Three Rivers mill was built, the Sherman Island power development was initiated and completed, the company's forest reserves enlarged, the dividends upon its preferred stock resumed, and its credit restored.

Mr. Dodge recently left for England where from now on he expects to spend a consideration portion of his time, partly for recreation but largely in the interests of the Mergenthaler Linotype Company of which he is president and the virtual founder, and which has a very extensive business in England and on the continent.

Toronto Paper Trade in Fairly Satisfactory State

Business Better Than it Was A Year Ago This Time and Merchants See in This Reasons for Being Optimistic—Small Pulpwood and Timber Operators Feel They are Discriminated Against—Demand for Pulpwood Exceptionally Quiet Just Now—Abitibi Development Co. Appoints Manager

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 13, 1925.—So far this month paper merchants report a better trade than during the corresponding month of last year. This leads a number of them to believe that the last six months in 1925 will show an appreciable gain over the record for the last half of 1924. Business is by no means easy to secure and is not what it should be. What trade is going is highly competitive, both locally and owing to the incoming of paper lines from other countries. The mills are fairly busy and while they are not running to capacity, the tonnage is being well kept up.

The trade generally is in a fair condition, all things being considered. Some wholesalers report a small increase for the first six months of 1925 as compared with 1924, but generally the volume is about the same, although it was confidently expected at the beginning of the year that the turnover would be well in advance of what it has been. Conditions have not rounded into shape nearly as rapidly as anticipated and there is a disposition to buy very cautiously and only as required.

Light-weight papers are in good demand at the present time, although the producers of bonds and ledgers are rather slack. One phase of the situation is that paper box plants are running only from 50 per cent to 60 per cent of capacity while board mills are operating on a larger basis and a fair quantity of the product is being disposed of. The demand for kraft paper is steady and the wrapping trade reports that the call for manilas and fibers has picked up a little during the past month. On the whole, however, no radical change is expected in the paper situation in the next few weeks but the outlook would seem to be a little better than it has been during the last few months.

The rag and paper stock trade is steady and prices are remaining quite firm. Collectors are handling more stock this season than they have for some time and the board and book mills are now buying more rags and other stock than they have been.

Small Woods Operators Complain

Some small pulpwood and timber operators in Northern Ontario claim they are being discriminated against by the Ontario Government which intentionally or otherwise are calling for tenders on such a basis that only the large firms can compete. Recent tenders called by the Government in Nipigon, Mississauga, Kapuskasing and Mattigami districts are of such a nature, it is stated, that only big firms or groups of firms can possibly hope to secure any portion of them.

The chief complaint of the small operator, with a capital of $50,000 to $100,000 is that the Government, in granting cutting rights on berths, demands such a large deposit that the banks refuse to grant as a loan to the small operator, although the security might be gilt-edged. It is argued that the larger operator can get a loan of any size to operate once he shows he is in a financial position to undertake the cutting rights.

"It is time the Government came to the conclusion that four or five smaller firms, employing about 50 to 100 men in the bush, do more for unemployment than does one big firm with fewer men and much more extensive equipment," stated a man interested in the situation. "There is a rapidly growing feeling in the north country that a deliberate attempt is being made to squeeze the small man out. From all indications there is likely to be something doing soon."

Pulpwood Market is Dull

Word comes from the Abitibi district that the demand for pulpwood is rather quiet at the present time. Prices for rough wood are $4 to $4.50 per cord on the ground, or $5 per cord loaded on cars. Sap-peeled on cars $7.50 per cord and rossed is $9.50 to $10.00 per cord on cars.

The Beavor Board Company, of Thorold, Ont., and the Howard Smith Paper Mills, Montreal, have bought considerable rossed wood two feet long. The Brown Corporation, of LaTuque, Que., has also purchased a quantity of wood and there are agents along the line who are contracting for greater or less quantities.

Most of the wood in Northern Ontario has been shipped out and though no estimate has been obtained as to the amount shipped, it apparently has not been as much as in past years. One dealer said that the Quebec-Abitibi section used to ship 50,000 cords but that the settlers, who cut it, hardly made their living as the prices were so bad.

Will Log on Conservative Basis

J. J. McFadden, of J. J. McFadden, Limited, Blind River, Ont., who spent a few days in Toronto recently, states that at the three plants of the firm they are cutting about 450,000 of white pine daily and all of the output of the mills so far has been sold and it will take them some time to overtake orders already booked. Mr. McFadden states that with the encouraging crop situation, not only in Ontario but throughout the West, there is a good deal better feeling throughout the country, which he believes will be reflected in the lumber business during the next few months. He is of the opinion, however, that most operators will be rather conservative in their logging operations during the coming winter and that production will not be as large as it has been.

New Manager is Appointed

The Abitibi Electrical Development Company, Limited, is a new company which was formed to take over the Island Falls power plant with transmission lines, etc. H. L. Sanborn, the hydraulic and electrical engineer of the Abitibi Power & Paper Co., Iroquois Falls, Ont., has been appointed manager of the company and has already taken office. The other officers are the same as for the Abitibi Power & Paper Co. Mr. Sanborn is the only superintendent of the company who occupied that position when the mill was started. He came from Iroquois Falls in 1913 as hydraulic and electrical superintendent, and has been in charge of these two departments ever since.

Notes and Jottings of the Trade

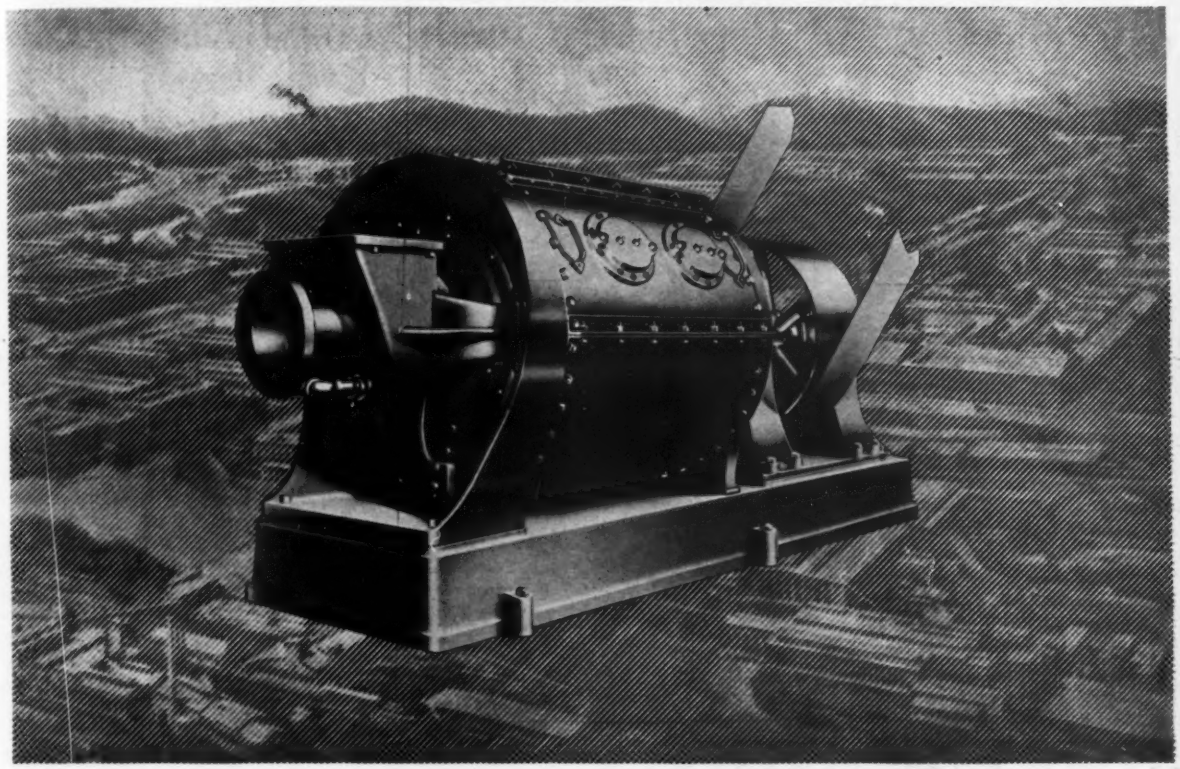
Fred M. Balls, manager, of the London branch of Fred W. Halls Paper Company, Toronto, is spending his holidays at his father's summer cottage at Pleasant Point, Sturgeon Lake, Ont.

James Thompson, of the Thompson and Heyland Lumber Company, Toronto, who are large buyers and handlers of pulpwood, returned recently from an extended pleasure trip to the Pacific Coast.

The British-Canadian Publishing Company, Limited, of Toronto, with an authorized capital of $50,000, has been granted a charter.

Fred Ratcliff, of the Ratcliff Paper Company, Toronto, has returned from a few days fishing expedition at Fenelon Falls, Ont.

The Provincial Paper Mills, Thunder Bay Company, Hammermill Paper Co., Port Arthur, and the Fort William Paper Company, of Fort William, Ont., have given Capt. Sam Wright the contract to pick their pulpwood in Lake Superior. The companies state that any other person having wood containing their mark in their booms or possession will be prosecuted.



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The screen room no longer presents the chief obstacle to pulp production efficiency.

The new Bird Pulp Screen, Haug Design, produces 50 to 100 percent more stock per hour than other screens. The stock is cleaner and stronger than can be obtained by the use of any other screening principle.

Cost of operation may be reduced 50 percent in many instances. Less than one horsepower per ton of stock is needed. This saving alone soon pays for the screen.

When you realize fully the economies you can effect with Bird Pulp Screens, it will be evident to you that they should replace existing equipment at once.

Tell us the conditions in your mill and we'll prepare screen room layouts and estimates.

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Canadian Ingersoll-Rand Co., Limited
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BIRD MACHINERY

8195

The Bird Pulp Screen

Recollections of Paper Men in the Fox River Valley

By Edward P. Humphrey

The following "Recollections of Men and Things in the Paper Industry of the Fox River Valley" was written by Edward P. Humphrey and was printed in a recent number of the Appleton Post-Crescent. Beginning with the early '90's Mr. Humphrey was for about a quarter of a century the Appleton correspondent of the Paper Trade Journal. *He is now located in Los Angeles, Cal.*

For about twenty-five years I acted as Fox River Valley correspondent for various trade papers in the East dealing exclusively with the paper industry, and during that time was accustomed once a week, to make a round of the paper mills, first to those in Appleton, next to those in Neenah and Menasha, next to those in Kaukauna, etc. On these occasions I discussed conditions in the industry with mill owners and managers, with all of whom I was on terms of considerable intimacy. My first job as correspondent was with the Paper Trade Journal of New York, then, and still, the most prominent of the special periodicals devoted to the paper industry. It was in the early '90's, and at that time the Atlas Paper Company operated ground wood mills on the site just below the first dam in Appleton now occupied by the power plant of the Wisconsin Traction, Light, Heat and Power Company. This was one of the places where I called on my rounds as reported for *The Post*, and one day I found something new going on there, being nothing less than preparations for the installation of a bronze digester for the making of sulphite fibre. Sulphite, as a paper-making material, was just beginning to be heard of, and the digester was made of bronze to resist the action of the acid used in the process. Digesters were also made of steel, lined with lead or acid-resisting tile or brick, but at that time this locality did not know much about them. S. R. Wagg, an early superintendent of the Fox River Paper Company, was the inventor and patentee at a later date of a lining of tile for digesters. The bronze digester was being installed under the supervision of its inventor, Garrett Schenck, who afterwards became president of the Great Northern Paper Company of Maine, one of the largest paper-making concerns in the country, an official position he still holds. When I saw what was going on I applied to Mr. Schenck who was superintending the job, for particulars, but was turned down very hard. "I don't want anything to do with reporters," he said, "I never yet knew one to get anything right." I appealed to my good friend Frank Clark, superintendent of the Atlas pulp mills to intercede for me, and he did so, it being finally agreed that Mr. Schenck was to give me the information I wanted, but the story was not to appear in the paper until he had seen a proof that satisfied him. So I wrote it up to the extent of about a column and he found nothing material to change. After that I was welcome around the premises and when shortly the Paper Trade Journal sent its business manager, William B. Hamilton to Appleton to pick up a correspondent for the Fox river district, which was rapidly growing in importance in the industry, Mr. Schenck told Hamilton he would be safe in taking me. Mr. Schenck introduced Latakia tobacco in Appleton. For his own use in a pipe, he mixed with it quite a liberal proportion of a stronger tobacco. Latakia soon became quite the rage among the young men of Appleton. While very dark in color it had no rankly strong flavor, but a most satisfactory richness and body.

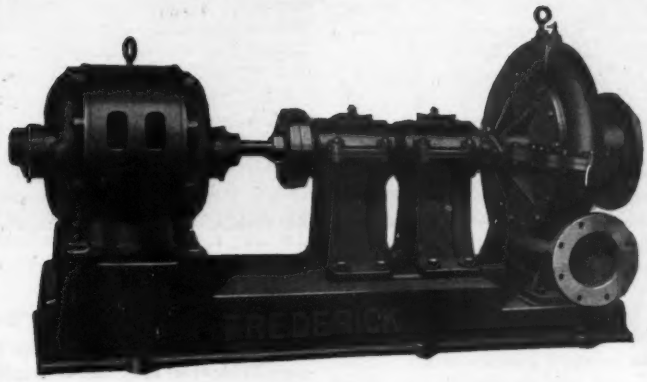
The Beginning of the Business

My recollections of paper manufacturing in Appleton go back to the old Richmond mill at the eastern end of the John street bridge, but about all I remember about it is that a cloud of steam always hung over it, and that the wind carried away from it a rather sickly smell of cooking stock. The big straw stack stood alongside the mill replenished daily from the loads the farmers brought in. The product of this mill was the thick, brittle, golden straw paper universally used in those days by retail market men in wrapping cuts of meat. It has now been replaced by the sulphite and sulphate papers, in the invention of apparatus for whose making Mr. Schenck was one of the pioneers. The first mill of the Kimberly-Clark Company, was built at Neenah in 1872, and was virtually the starting point of the paper-making industry in the Fox River Valley.

Gala Days in the Paper Business

It was not until the '80's and '90's however that the golden age of paper manufacturing on the Fox River came in. It was currently reported and believed that some of the mills built at that time paid for themselves in eighteen months. The margin of profit was so large that no extravagances or mistakes could endanger it. If a drainerful of stock was not exactly the right color or up to grade in other respects, it was dumped in the River and forgotten. No one cared what raw materials cost, so much money was being made anyhow. This last condition resulted in a swarm of salesmen for Eastern houses selling raw materials coming to the Valley. Most of them made their headquarters at the Waverly House in Appleton, which had a great reputation for the excellence of its cuisine. Frequently from three to a half dozen of these men would be in town at the same time. They were amply supplied with money for the entertainment of customers and friends, and champagne suppers at Henry Wendelborn's were scheduled in swift succession. Mrs. Wendelborn was a famous cook, and the regular Saturday night free lunch at "Henry's" also, assumed the proportions of a dinner whose succulence and variety could hardly be purchased now for a dollar. Promptly at nine o'clock it would come down the dumbwaiter from the living quarters upstairs, and Henry himself would bear it importantly to the counter, in much the same way as the boar's head in ancient days used to be borne in to the banquet table. Among those present were sure to be a goodly number of men from the paper mill offices, superintendents and foremen, and likely enough one or more of the generous visiting salesmen. Some of these salesmen whose names I think of now were: Charles E. Martel, the blithe Frenchman, with his head in the air and a mincing step, usually humming or whistling a little song as he walked along; Col. W. H. Bucher of Cincinnati, a veteran of the civil war, one of the older traveling representatives, who told a good story and was an especial crony of Tom Reid and John M. Baer; the debonair Harry Bartow, with all the polish and finesse of New York; J. H. McCormick, another New Yorker, one of the younger men, rather steadier than the average; young Barton, I do not recall his given name, one of the paper machinery-making firms of Rice, Barton & Fales, a veritable Beau Brummel, who parted his hair behind and brushed it forward toward his ears in a fashion that made the eyes of our Appleton yokels bung out in wondering admiration; the two Charles Wilsons, one the story-telling Scotchman who sold Babcock & Wilcox water tube steam boilers, and the other the salesman for a felt-manufacturing firm of Albany, New York; E. E. McCord, of the Boston Belting Co., who sported a lady-killing mustache and whose manner was always one of gracious dignity; W. W. Mead, whose "sweet smile haunts me still." These men I have named, with perhaps a couple of exceptions, were the more substantial and sober of the visiting salesmen, but there were others who used to make their visits to the Fox River Valley the excuse for protracted drinking bouts. In this day it is hard to understand how they held their jobs—but one thing may be said about them: the hard drinkers are all dead now, and most of them died long ago in middle life. Whatever it was ostensibly that carried them off, pneumonia, perforated kidneys or mushy arteries, back of it might

FREDERICK PUMPS



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have been discerned the grinning face of King Alcohol, easily mistaken for the accursed lineaments of the Prince of Darkness himself.

H. J. Rogers

One of the early prominent men in the paper industry in Appleton, was H. J. Rogers, who was in charge of the paper manufacturing interests in this valley of John Van Nortwick and his sons John S. and William M. Van Nortwick, of Batavia, Illinois. This was many years before John S. Van Nortwick himself came to Appleton to make his home. Mr. Rogers with his wife and daughter lived for a short time on Alton street, then removed to the "Brown and Nickerson" house on Lawrence street at the head of Pearl street, and afterwards built and occupied the house now owned and occupied by A. W. Priest, on the river bluff just above the then frame mill of the Appleton Paper and Pulp Company, one of the Van Nortwick properties, at the north end of the first dam. It was at this mill under Mr. Rogers that G. F. Steele, and Will and Theodore Stoppenbach got their starts in the paper manufacturing business. Possibly barring the residence of A. L. Smith, which was much older and carried a certain unique air of dignity and culture, the Rogers' house was the distinctive residence mansion of Appleton. It was heated by steam from the boilers of the paper mill, and lighted by some of the first incandescent bulbs ever brought to Appleton, current being supplied from a pioneer electric generator in the paper mill. The first mill of the Combined Locks Paper Company was built under the supervision of Mr. Rogers, who named the new corporation the Florence Paper Company, after his daughter. When the break came between him and the Van Nortwicks, the latter changed the company's name to the one it bears today. Mr. Rogers came to Appleton from Denver, which in those days was an outpost of the Great West and one of the acknowledged habitats of the six-gun man. In fact it used to be whispered with considerable awe among the young boys of Appleton that Mr. Rogers himself was "no slouch" with a revolver, and they used surreptitiously to practice the gesture which Mr. Rogers was reported to use in shooting, one that was new to this locality, consisting of drawing the weapon, raising it above the line of vision and then bringing it rapidly down, pulling the trigger at the instant the sights came down to the mark, all these movements being executed in the shortest possible space of time, presumably before one's antagonist should "get the drop" on him. Mr. Rogers was of rather more than medium height and weight, alert in his movements, with a short black mustache and a crisp way of speaking. Some people in our small town stood a little in fear of him as a representative of big-city ways and methods to which they were not accustomed. Doubtless this attitude was not justified and arose from imperfect knowledge of Mr. Rogers' character—certain it is that none could be more simple, gracious and charming than his wife and daughter.

A. W. Patten

A. W. Patten, one of the pioneer paper manufacturers of the Fox River Valley, was one of the old-school type of self-made men, having a high contempt for colleges and their graduates and an equally high admiration for the school of hard knocks and its graduates. If one judged solely by financial results, as exemplified in his own case, he was at least partially justified in his opinions. Although it was like expressing blood from a turnip to wring a dollar from him for higher education, he was frequently very generous toward other causes which he considered more worthy. He helped churches, even building one or two wholly at his own expense in his small paper mill towns on the Wisconsin River, and contributed to numerous local charities. It was always done with an elaborate pretense of secrecy, "a generous man who wishes his name to remain unknown," but which mystified no one. "A. W." had almost as little use for architects when he built his mills as he had for college professors at any time. He delegated "nothing to nobody," but was on the job himself, early and late. I have a picture of him in my mind's eye now, as I saw him, when he was building the Outagamie Paper Company's mill at Kaukauna in his shirtsleeves, sitting astride a big square timber at second floor height, with his legs dangling over vacancy, telling everyone in sight what to do next. When he built the Outagamie mill he put up four thick stone walls, covered their enclosure by a stout, honest roof, and placed his machinery inside, if not exactly "by guess and by gosh," at least largely by rule of thumb that he had found satisfactory in other cases. Mr. Patten took a sardonic glee in shocking John McNaughton with language unsuited to the ears of a Sunday School superintendent of the Methodist church. The small, boxlike office of the Patten Paper Company, was divided by a partition about as high as the partitions in a bank, and John McNaughton always sat on a stool behind the partition but in front of a window in it like a bank teller's window. When a salesman or chance visitor came in, "A. W." would come out in front of the partition and regale the guest with racy stories while John McNaughton shriveled himself into as small a space as possible behind the partition. Mr. Patten's life was bound up in his son "Tom," and when Tom died suddenly, as the result of too high altitude, while on a pleasure trip to Yellowstone Park, the blow was a stunning one to his father. I was writing the news on *The Post* at that time, and when I came back to the office from a visit to the street, Tom Reid pulled some bankbills from his pocket saying: "A. W. Patten was up here a few minutes ago, all broken up over Tom's death and handed me forty dollars; here, I'll split it with you," and counted out twenty dollars But this was no case of bribing the press, for I had already written up the account of poor Tom's decease.

Admiral "Bob" Evans

A man of national reputation whom the paper industry was responsible for bringing to Appleton for a residence of several months, was Commander, afterwards Admiral, R. D. Evans. This was at the time of the building of the mill of the Manufacturing Investment Co., now a division of the Consolidated Water Power Co., at the eastern end of the John street bridge. Grover Cleveland was president of the United States at that time, and the Manufacturing Investment Company was generally understood to be a sort of administration affair. Mr. Cleveland himself, Don M. Dickinson, and others close to the administration being supposed to have considerable holdings of stock in the concern. Anyway, Commander Evans was sent out to superintend the construction of the mill. He lived at the Waverly House and was on the job at the mill site most of every day, spending his time not inside, but out on the work, seeing to it there was no loafing and that at the end of the day everything was coiled down shipshape and Bristol fashion. In my capacity as reported, I kept close track of what went on at the building site, visiting it every few days, and always found Commander Evans, who had a stiff knee which kept his leg permanently out of plumb and who walked with a cane, stumping about the place. After a while a fence was built about the work and it was given out that visitors were unwelcome. Up to that time Commander Evans had taken no notice of me, but soon after the fence was put up a friend of mine on the job told me that Commander Evans had inquired about me and didn't want any reporters around. Up to this time anyone might wander at will in and out of any paper mill, but from thenceforth "No Admittance" signs began to appear. Commander Evans, as was reputed to be the case generally among navy men, was a devotee of good whisky. It was said that he kept several casks of it cruising about the world in warships, the motion of the ships serving to keep the contents of the casks constantly agitated, which was conducive to an especially prompt and delicious "aging" of the liquor, and that he kept a quart flask of this precious medicament always about his person. Anyhow, many stories, accompanied by appreciative lip-smackings, were told about this Brobdingnagian flask, by those who had been privileged to sample its contents.

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The Manufacturing Investment Company was the first mill in the Valley to install in its office what might be called a "modern" accounting system, which attempted to determine accurately the cost of the product, where the leaks were if any, and in general systematic survey of the financial operations of the plant. Frederick W. Taylor, who was even then an acknowledged authority in such matters and afterward achieved a national reputation for devising labor-saving methods in many different lines of work, was brought out to put in the system. It was almost stupefying to those of us accustomed to the one-bookkeeper methods then in vogue, to see the dozen or score of clerks in the office of the Manufacturing Investment Company, all slaving away at what seemed to us the snarling and unsnarling of endless lengths of red tape. The job department of *The Post* was given a list of blank forms to figure on printing which was little less than astounding in number and general "pifflingness," as accounted in those days. The mill had not been long in operation before it began to be whispered about, not a little to the secret gratification of older manufacturers who had been accustomed to simpler methods, that bringing in a rank outsider to build the mill had resulted in extravagant construction costs, and that sale of the product showed little profit in spite of the cumbrous office system calculated to insure it. Whether or not these stories were true, I do not pretend to know, but it is certain that every paper manufacturing concern today maintains a cost accounting department, without whose services it is convinced it could not long remain in business.

J. Stillwell Vilas

One of the most charming men in the paper business long ago, was J. Stillwell Vilas, of the Badger Paper Company, Kaukauna. "Joe" was a "prince," to use an expression which better than most describes the characteristics of honesty, democracy, affability and generosity which make a man beloved. Perhaps he was not as shrewd and hard-working a business man as some others in the industry, perhaps he played around more, but I venture the assertion that no man in Kaukauna was better thought of by rich and poor, high and low alike, than he. He was "Joe" to every workman in the mill, and no one who was a decent chap himself, could detect the slightest difference in Joe's regard, whether he wore broadcloth of denim. Joe, like the traditional agreeable fellow, was a "fat man," and his weight finally came to give him concern, not because of his appearance, which was not at all ungainly, but because of evidence of what is now known as high blood pressure, warning him of what he might expect unless he took measures to prevent. This was at the time when the "starvation cure" was first getting attention, and Joe "took" it. I cannot recall exactly how long it was that he went without food. It was not forty days, but my impression is it was at least thirty, and it was certainly effective in reducing his weight, though he did not even then become emaciated. Afterwards for a long time he limited himself to one meal a day, nor did he gorge himself at that, finding that his stomach accommodated itself without undue craving to a moderate amount of food once a day. This was before the days of automobiles and luxurious camping cars such as are frequently seen now, but Joe had the most complete camping wagon, with the possible exception of the one devised by the late John Stevens, Sr., ever seen in these parts. It did not contain inside sleeping arrangements like the Stevens wagon, as tents were relied upon at night, but it carried not only four people in comfort, but an outfit of paraphernalia calculated to provide every eating and sleeping luxury that heart could desire. It was drawn by a pair of great, splendid, friendly horses, accoutred in shining harness, and a camping trip with Mr. and Mrs. Joe Vilas and this outfit to the fastnesses of Door county or elsewhere made a holiday of such utter happiness as forever to be looked back upon as one of life's red-letter experiences.

"Charley" Howard Teaches a Fireman

Charles W. Howard, proprietor of the C. W. Howard Paper Company, of Menasha, was the first paper manufacturer in the Fox River Valley to use crude oil for fuel under his steam boilers. The advantages of crude oil over coal were the same then as now, among others being lessened labor of firing, one man being sufficient to manipulate the various valves needing attention, instead of several being required to shovel coal, etc. After three years trial the oil burners were taken out of the fireboxes and the coal grates put back. When I asked about it Mr. Howard told me that he had made a three-year's contract for oil at a favorable price with one of the big oil companies, and would have been glad to renew it, but the company wanted so much higher price for the oil on a renewal that it neutralized the advantages of using it. "Charley" Howard was a great man to keep track of things around the mill, and frequently appeared unexpectedly in the middle of the night or at other inconvenient seasons, to see what was going on, much to the discomfort, not to say dismay, of employees. He once told me with a good deal of enjoyment of going to the boiler house during the wee, sma' hours of a certain morning, and finding the man in charge comfortably asleep in his chair. "Now, John," he said to the frightened fireman, "you are all tired out and ought to have a thoroughly good rest. You go right home and go to bed and I'll stay here and do the firing." These deceptively soothing words were said in a manner that "Charley" Howard knew how to assume on occasion, low in tone and without apparent excitement, but with a certain fearsome grimness of expression, accompanied by a sort of gritting, not to say grinding, of the teeth, which seemed to promise terrible things. And the fireman actually went home, though probably not to sleep, and his employer stayed and tended the furnaces the remainder of the night. It would be a safe bet that that fireman never slept "at the switch" again.

J. E. Thomas

J. E. Thomas, like W. C. Wing, whom I am going to say nothing about as in this article I am confining myself to men who have passed to the Great Beyond, scraped his first acquaintance with the paper manufacturing business through the medium of stenography and typewriting, occupying the position of stenographer for the Pulp Wood Supply Co., whose office was on the upper floor of the old Manufacturers' Bank Building, now occupied by Voigt's drug store. At that time W. B. Murphy was in charge as company manager. Every morning when I went in "Joe" would be pounding his typewriter as though his life depended on it and he hadn't long to live. He had one of the first machines to come to Appleton, but not the very first, as I had that myself. Joe seemed just like a boy then, and that was really what he was. He did not live long enough to be thought of ever as more than a young man, though actually he had crowded great business experience into a comparatively short life. His rise from small beginnings to a prominent position in the industry, like that of several now-living contemporaries of his whom I might mention, was due to that "keeping everlastingly at it," which is the surest recipe for success in the business of life.

"Bev" Murphy has Hysterics

W. B. Murphy was Appleton's most dependable and most in demand bass singer. W. A. Clark was only lesser, and frequently requisitioned when in town, but he was out on the road more than the other. From Fourth of July celebration to funeral, no event calling for "local" vocal talent was complete without "Bev" Murphy's participation. On one occasion he was asked to sing as a member of a mixed quartet at the funeral of a child. There was no piano or other instrument to be depended upon for accompaniment or to give the key, for which latter a tuning fork was relied upon. At the conclusion of a rather emotional address by the officiating clergyman the signal was given for the closing hymn. The members of the quartet got their feet, the tuning fork was pinched and let go, and the hymn started. But something had gone wrong, certain members of the quartet had not located their

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positions correctly from the fork, and were off the key. By some law of contraries, the contrast with the pathetic things that had gone before affected the risibilities of the members of the quartet, who, after a single more or less blurted and explosive stanza, sat down, submerged their faces in their handkerchiefs, and gave way to hysterical mirth. After the ceremony the clergyman, who had utterly mistaken the nature of their emotions, doubtless trying to let them down easily from a bad piece of work, turned to the singers and said: "I sympathized deeply with you in your agitation. Sometimes I have been similarly overcome myself at funerals!"

A short time ago as guest of a friend I took dinner at the Hollywood Hotel, and my recollection went back to the time when I was in that dining room as the guest of Peter R. Thom. It was at the Hollywood Hotel that Mr. and Mrs. Thom used to stay on their winter vacation visits to California, and it was at this hotel, on the last of these visits, that Peter (everyone who knew him well called him "Peter") unexpectedly passed over the Dark River to the land that is fairer than day. Revisiting this hotel brought to mind an experience Peter told me about in connection with an accident he once had, somewhat similar to an experience of my own, both of which may perhaps be worth relating. Before other means of transportation were conveniently available Peter used to drive with a horse and conveyance between his home in Appleton and his office at the Kimberly mill. One winter day he started out as usual, having as a companion Robert Richard, then employed in the First National Bank. Shortly before reaching the mill the horse ran away, the cutter was overturned and the two men thrown out. While not dangerously hurt as afterwards developed, both men were painfully injured, and Peter especially suffered from a profound shock. He could summon no atom of strength so that in his utter weakness he even resisted the idea of being removed to his home from the farm house to which he was first taken. The doctor however, mixed him up a draught in a tumbler, a sort of milky-looking concoction, and said: "Here, drink this; it will put you on your feet." And, true enough, when Peter had taken it, to use his expression to me, he "felt a supernatural exaltation both of body and spirit," the strength of ten seemed to have entered into him and he also felt a great surge of mental exhilaration, so that it appeared to him that any task, no matter how stupendous, would be easy of his accomplishment.

My own experience bore resemblance to this, though the cause of it I never knew. It certainly was not due to a "draught" of anything, heart-stimulant or otherwise. Nor was it a dream, as I was as indubitably awake as at this moment. It was many years ago. I had boarded a street car at the College avenue corner to go to Neenah and had just taken my seat, when in the twinkling of an eye I felt a sort of miraculous ecstasy. It seemed as though I had been carried forward a thousand years or perhaps a thousand generations to a millennial day when the whole earth was ruled by love instead of selfishness, and mankind universally in its intercourse conformed to the Golden Rule. It seemed to me that life, no longer, for any person, held worry or anguish, but stretched in unbroken purest happiness from end to end, like a foretaste of Heaven itself, a joyousness in which I fully participated at that moment. How long this elevation of spirit lasted I do not know, probably only a few seconds, but passing, left behind an ineffable memory of what life may mean, some day in the far distant future, when the foul dross of sin has been eliminated from the race by the purifying fires of ultimate experience!

American Paper Co. Moves

[FROM OUR REGULAR CORRESPONDENT]

LOS ANGELES, July 10, 1925.—The American Paper Company has moved to its new quarters at 2153 Sacramento street, having recently acquired a long-term lease on a one-story brick building. The company wholesales, specializing in tissue and wrapping paper besides woodenware. The company has increased the size of its quarters three times since organized three years ago.

Corner Stone Laid for Building Donated by H. A. Moses

TICONDEROGA, N. Y., July 13, 1925.—The cornerstone of the new headquarters building of the New York State Historical Association, a gift from Horace A. Moses a native of Ticonderoga and president of the Strathmore Paper Co., of Mitteneague, Mass., was laid with impressive ceremonies on July 8. At the same time the 167th anniversary of the Battle of Ticonderoga was celebrated by the unveiling of a tablet in commemoration of the gallantry of the Black Watch Regiment. Many distinguished men from various parts of the United States and Canada were in attendance at the celebration.

The new historical headquarters building will cost approximately $200,000, of which Mr. Moses will pay $175,000, the remaining $25,000 having been raised by the New York State Historical Association, this being one of the stipulations set down by the paper manufacturer. The building will be a perfect replica of the famous John Hancock house which stood near Boston and is considered the archetype of American Colonial architecture. It stands at the left of the Liberty Monument, presented to Ticonderoga by Mr. Moses and unveiled last year and in front of the Moses-Luddington hospital which also owes its existence largely to the beneficence of Mr. Moses.

The cornerstone ceremony included an address by Mr. Moses presenting the building to the New York State Historical Association. George D. Pratt, former State Conservation Commissioner, accepted the building in behalf of the State Association. Included in the articles deposited in the cornerstone was descriptive matter concerning the presentation of the headquarters building by Mr. Moses and a biographical sketch of the donor. Also a deed from the Moses-Luddington hospital to the New York State Historical Association.

In addition to presenting the historical headquarters building to the State Association Mr. Moses presented also a deed to the Moses-Luddington hospital which was a gift from himself and his sister.

Wyomissing Paper Co. Increases Insurance

Expansion of its group insurance program has resulted in increasing the total coverage on employes of the Wyomissing Glazed Paper Company of Reading, Pa., from about $57,000 to more than $120,000.

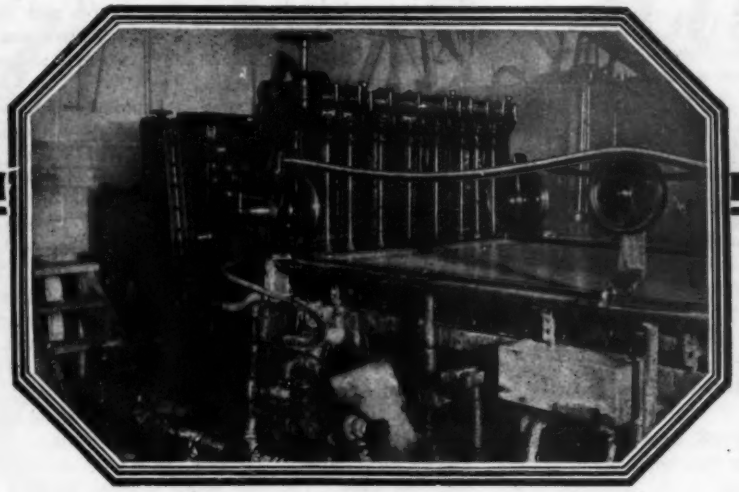
Under the original contract with the Metropolitan Life Insurance Company more than eighty employes received $500 individual protection, which was to be increased at the rate of $50 yearly until the maximum amount of $1,000 was obtained. The new schedule, which is on a cooperative basis, employer and employee sharing the cost of the insurance, provides each contributing employee with $1,000 additional protection.

Supplementing the actual provisions of the policies, which contain total and permanent disability clauses, certain service advantages are offered. These include a free visiting nurse service and the distribution of pamphlets on health subjects and sanitation.

Jenssen Co. Makes Important Installations

The G. D. Jenssen Company, 200 Fifth avenue, New York City has recently completed acid tower installations for the Marinette and Menominee Paper Company, Marinette, Wis., and the Newfoundland Power and Paper Company, Ltd., Corner Brook, Nfld.

At the present time the company is installing Jenssen Tower Systems in the following mills: Price Brothers & Co., Ltd., River Bend, P. Q.; St. Maurice Lumber Company, Three Rivers, P. Q.; St. Lawrence Paper Mills, Ltd., Three Rivers, P. Q.; Minnesota and Ontario Paper Company, Kenora, Ont.



A Wisconsin Mill Immediately Obtains Results With the Inlet

Recently a Voith High Pressure Stock Inlet was installed in one of Wisconsin's largest specialty mills. Results were immediate. On the very first day of operation production was increased over 30%. A 144 lb. tablet cover sheet was produced at a speed of 94 feet per minute, having better formation and more uniform caliper. The strength of the sheet was greatly increased and the pop test showed better than a point per pound.

These improvements are usual experiences when Voith Inlets are installed. This new device not only makes better paper but lowers production costs as well. It reduces wire, shutdown and replacement expense and is a valuable factor in the reduction of broke losses.

We will be glad to give you further information regarding above statements. A request for booklet will give you full particulars concerning other installations of the Voith Stock Inlet that are making better paper at a lower cost. Write today for fully illustrated booklet telling about the Voith Inlet.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Ave.

New York Trade Jottings

The regular monthly meeting of the Binder Board Association will be held in this city on July 21.

* * *

L. M. Alexander, President of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., has been a New York visitor recently.

* * *

Elis Olsson, vice president and general manager of the Chesapeake Corporation, West Point, Va., called on friends in the paper industry here last week.

* * *

Fred Enders and J. O. Bulkley of Bulkley, Dunton & Co., 75-77 Duane street, have returned from an extensive tour of pulp mills in Scandinavia, England and the Continent.

* * *

The estate of Brian G. Hughes, bank president and manufacturer of paper boxes, who died last December, has been appraised at $424,779 of which more than half was real estate and mortgages.

* * *

Frederick L. Smith, pulp and paper mill engineer of 21 East 40th street, is making an extended trip through Georgia, Mississippi and Florida in the interest of some of the Northern paper mills.

* * *

The Joint Committee on Approved Chemists of the American Paper and Pulp Association has approved for listing, B. K. Steadman of the Standard Paper Manufacturing Company, Richmond, Va.

* * *

The Bureau of Foreign and Domestic Commerce has sent the Pulp and Paper Section of the American Paper and Pulp Association some valuable data on the proposed paper standardization and simplification originating in Germany. This matter had been referred to the Simplification Committee.

* * *

O. M. Porter, assistant secretary of the American Paper and Pulp Association, is slated to address the Rotary Club at York, Penn., on July 22, his subject being "Organized Effort in The Paper Industry." The mills in that section have been invited to attend the meeting, the invitation having been extended by W. S. McClellan of the P. H. Glatfelter Company of Spring Grove, Pa.

* * *

The American Paper and Pulp Association is looking into the matter of the recent Interstate Commerce order prohibiting the use of multiple tank cars for the shipment of liquid chlorine, the investigation being in the interests of the mills which use chlorine for bleaching purposes. The correspondence already at hand on the subject indicates that the order will work a hardship on the mills and the Association is taking the matter up with the Commission through the Paper and Pulp Committee of the Atlantic States Shippers Advisory Board.

Charles A. Esty Paper Co. to Issue Catalogue

A new catalogue and price list, the most complete yet issued by the Charles A. Esty Paper Company, will make its appearance early in September. This date will make a milestone in the business of this company, it having been incorporated on September 8, 1915. The catalogue will be known as "The Anniversary Number" and is published for the printing, publishing and allied trades only.

The present officers of the company are: Charles A. Esty, president and treasurer; Edward D. Bement, vice president; Graham Blandy, 2nd, secretary.

Merchandise stocks are carried in Boston and Worcester.

Boston Paper Trade Quiet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 11, 1925.—Despite an extremely quiet week, the first six months of 1925 exceeded all anticipations here. A study of the books, merchants admit, shows that the first half of the year kept well up to last year's figures and in many instances exceeded them. This was particularly noticeable in houses dealing with the finer grades.

The quiet period just now is expected. Houses are prepared for it. They are running on small staffs and the buying is along small-order lines. There is, however, a steady flow of small business. News print consumption is falling off with practically every Boston newspaper cutting down the size of their summer time editions. This consumption is cut in half, in some circles it is said. News and advertising is "taking a vacation," therefore the size of the paper is reduced.

The Kraft situation is dull, little or no business being done, with a possible exception or two. The mills remain firm on their prices though evidently obtaining a slim portion of orders. What is the answer—It is explained, there must be a drastic slowing up process at the mills, with many cost reducing and labor saving devices being installed, as it is quite evident that the consumption of paper just now is sub-normal.

Wax paper houses claim business is very good, with mills running full time. The box board business is quiet and the rag stock offices say there is practically no business in their line. Reports from these quarters show several big mills shutting down.

So Boston, this week, represents a confused situation, with good reports on the one hand and doleful statements on the other. Through it all, however, the writer gains the impression that no one really is pessimistic. Everybody is talking of the business to come.

Griley-Unkle Engineering Co. Changes Hands

The Griley-Unkle Engineering Company of Monroe, Mich., having executive offices at Lancaster, Ohio, has been sold to a group of men in Fort Wayne, Ind., headed by C. M. Niezer, president of the First National Bank of that city. The main offices of the business have been transferred to Fort Wayne, Indiana.

The new concern has retained H. J. Andrews as general manager of sales and production. The Michigan company has been dissolved, while the Indiana company has been incorporated. Charles W. Unkle, the patentee of all of the machinery and systems of the company remains as consulting engineer.

The Griley-Unkle Engineering Company is well known in every paper making point in the world. Its products have all given universal satisfaction. The concern originated the continuous beating engine, and is unique in having no competition. This is purely an engineering proposition.

At the present time five hundred and forty-three Extractors are operating in one hundred and thirty-one mills in the United States, Canada and foreign countries. Just now the Griley-Unkle Engineering Company is perfecting a device that it is said does everything in a beater but pull the plug.

The Griley-Unkle Engineering Company has perfected and is putting on the market a new system of coloring paper.

The company is daily taking on new business—in fact Mr. Andrews reports more orders on the books than have ever been entered during previous years.

To Hold Merchants Conference at Holyoke, Sept. 14-15

HOLYOKE, Mass., July 13, 1925.—The third Annual Mill and Merchant Conference of the Associate Mills, Crocker-McElwain Company and Chemical Paper Manufacturing Company will be held at the Hotel Nonotuck on Monday and Tuesday, September 14 and 15 next. A detailed program will be announced later.

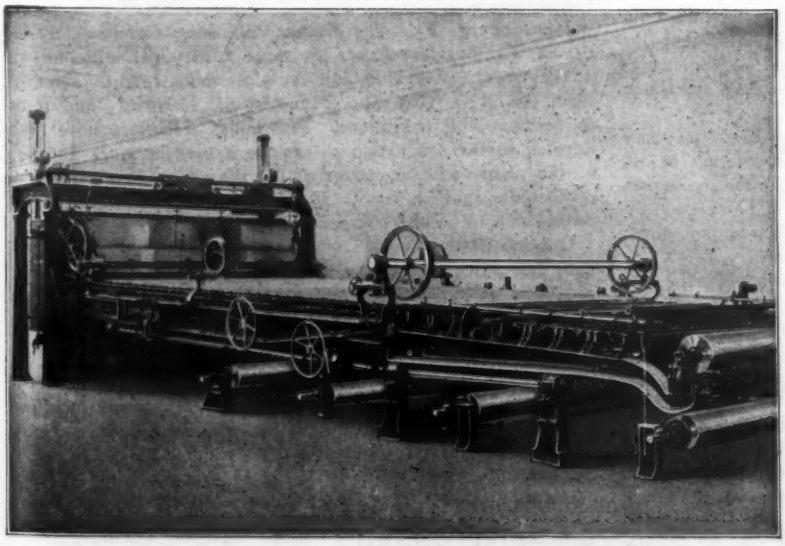
3 Exclusive Patented Features

THE ADJUSTABLE, REMOVABLE and SHAKABLE features of the NEW BELOIT FOURDRINIER have demonstrated over a period of some years that this new advancement in the science of paper making is practical, efficient and economical. Records have proved it and are proving it daily in actual service.

The amount of throw of the BELOIT shake may be adjusted by a simple hand-wheel and the speed of throw by an adjustable motor *while machine and shake are running.*

Wires are changed in an hour or less, saving hours of extra labor and man power.

Unusually heavy construction of shaft, bearings and upright shake posts. Shake is applied at four places, but it may be detached from any one or all four. The light shaking rails are supported from the heavy stationary ones by flexible leaves. The shake assures a better formed sheet at a higher speed.



Adjustable, as to pitch to suit stock conditions and different grades; *Removable* for ease and speed in changing wires and *Shakable* for the interlacing of fibres at increased speeds—these are the three main features of the NEW BELOIT. You will find its other features equally favorable, in keeping with the three mentioned.

Get the facts

Write for Bulletin No. 9

The NEW BELOIT FOURDRINIER

Beloit Iron Works Established BELOIT IRON WORKS BELOIT WIS. **Beloit, Wis., U. S. A.** Since 1858

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

New Haven, Conn.—The National Folding Box Company, James street, has awarded a general building contract to the Anchor Corrugating Construction Company, 145 West 41st street, New York, N. Y., for the erection of a new one-story addition, 60 x 350 feet, at James and Alton streets, estimated to cost about $31,000. The structure will be used largely for storage and distributing service.

Indianapolis, Ind.—The Inland Box Corporation, recently organized with a capital of $200,000, will begin the installation of equipment in one of the buildings at the plant of the Nordyke & Marmon Company, West Morris street, lately leased, for a new factory for the manufacture of corrugated paper and fibre boxes. It is expected to have the new plant ready for service in August. Herman C. Krannart is president.

Nutley, N. J.—George LaMonte & Son, 229 Kingsland road, manufacturers of special processed papers, have awarded a general contract to Henry M. Doremus & Company, 36 Orange street, Newark, for their proposed one-story power house, estimated to cost close to $30,000. The Fletcher-Thompson Company, Bridgeport, Conn., is architect and engineer.

Bastrop, La.—The International Paper Company, 100 East 42nd street, New York, N. Y., is said to be planning for alterations and improvements in the local plant of the Bastrop Pulp and Paper Company, recently acquired, with equipment for increased output. The mill has been devoted to the manufacture of kraft papers and is expected to continue in this same line under the new ownership.

St. Paul, Minn.—The Brown & Biglow Company, University avenue, will soon break ground for the construction of its proposed new plant addition to be used primarily for the manufacture of paper boxes and containers. It will be three-story and basement, totaling about 100,000 square feet of floor area, estimated to cost close to $25,000, with equipment.

Fitchburg, Mass.—The Fitchburg Paper Company will make improvements in the power plant at its mill to include the installation of coal pulverizing and handling machinery, and other operating equipment. It is expected to proceed with work immediately. George R. Wallace is president.

Lambertville, N. J.—The local plant of the Lambertville Paper Manufacturing Company, known as the Perseverance Paper Mill, has been acquired by George A. Leavitt, Lambertville. The plant has more recently been occupied by the Jespersen Newsprint Corporation for the production of newsprint from waste material. The new owner has plans under way for remodeling and equipping the plant for the manufacture of paper bags and containers, and will develop the mill to full capacity in this line. It is expected to have the works ready for service at an early date.

New Orleans, La.—The storage and distributing plant of the Letellier & Philips Paper Company, Decatur and Water streets, was damaged by fire, July 4. An official estimate of loss has not been announced. The damage will be replaced.

Rochester, N. Y.—The Kee Lox Manufacturing Company, Key Lox place, manufacturer of carbon paper and other special papers, has completed plans and will proceed with the construction of a new addition to its plant, to be two-story, 40 x 50 feet. The company will also make alterations and improvements in the present mill. The entire work will cost about $30,000. A general contract has been let to P. G. Hauck, Cox building. L. McCord, Powers Building, is architect.

Philadelphia, Pa.—The Royal Pioneer Paper Box Manufacturing Company has disposed of its factory at 934-42 North Third street, consisting of a three-story structure, to Wilskir & Co., for a consideration said to be close to $60,000. It will be used by the new owner for another branch of industrial service. It is understood that the Pioneer company will occupy another building for continuance of manufacture.

Tonawanda, N. Y.—The Kardex-Rand Company, manufacturer of card stock for office filing systems, etc., is considering the establishment of foreign branch plants on sites to be selected in France and Germany. It is expected to consummate plans at an early date. James A. Rand, Jr., president of the company, has recently sailed for Europe to arrange for the projects.

Johnsonburg, Pa.—The Curtis Publishing Company, Philadephia, Pa., has taken over the three local paper mills, known as the Clarion, Highland, and Wulphite mills, recently acquired from the New York and Pennsylvania Company, and plans to continue full operations. The mills, heretofore have been devoted to the production of various grades of stock and one of the plants will be converted for the exclusive manufacture of coated magazine paper. Plans are also under consideration for extensions in the last noted mill for increase in output.

Iroquois Falls, Ont.—The Abitibi Power and Paper Company has work under way on extensions in its electric power plants at Iroquois Falls, and at Island Falls, to include the installation of additional equipment. Contracts will be placed for apparatus at an early date.

New Companies

Dayton, Ohio—The Dayton Paper Stock Company has been incorporated with capital of $5,000, to deal in paper goods. The incorporators are Nicholas Metz, Samuel and E. H. Graff, Dayton.

Holyoke, Mass.—The Hazen Paper Company, has been incorporated with capital of $50,000, to manufacture paper products. The incorporators are Joseph B. Weis and John N. Hazen, 8 Brooks avenue, Holyoke. The last noted will act as president and treasurer.

Philadelphia, Pa.—The Vactite Container Company, care of the United States Corporation Company, 8 Pennsylvania Building, Philadelphia, representative, has been incorporated

...yourself if the right thing is being done or not.

An old sulphite cook told me not long ago his opinion about flowmeters, saying: "With one of those flowmeters a baby can cook pulp without one day's practice by only following the instructions." This shows best the possibilities in the use of meters.

Uniform Steaming

One very often hears old cooks saying that they never steam digesters alike. They seem to be proud of it, but in my opinion the uniform steaming of the digester is the most important thing in the sulphite cooking process for getting a first-class, uniform product.

For my part I never allow the steam valve to be opened to...

From *Technical Association Papers and Reports*

Determine the ideal "cook" —then repeat it

A definite amount of steam, a specific rate of admitting it, a certain temperature and pressure—these factors determine the ideal "cook". Consistently repeat the process and you are assured a uniform pulp produced most economically.

But even an experienced operator cannot accurately duplicate conditions without something to guide him.

The G-E Type F-15 Flow Meter is ideal for this purpose. It records temperature, pressure and flow on one chart—making a record for the superintendent as well as guiding the operator.

General Electric has studied extensively the applications of flow meters in paper mills. Its complete lines of mechanically and electrically operated meters include *the right meter for any job.* Ask about them.

37-14

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN ALL LARGE CITIES

under Delaware laws, with capital of $750,000, to manufacture paper, fibre and other containers. The incorporators are J. E. Thebaund, and Max Veeck, Philadelphia; and Herbert Cross, Cynwyd, Pa.

New York, N. Y.—The Fine Arts Papier Mache Corporation has been incorporated with capital of 100 shares of stock, no par value, to manufacture paper specialties. The incorporators are W. C. Duntze, F. R. Stevens and M. G. Cohan. The company is represented by M. W. Manning, 40 Wall street, New York.

Financial

Rochester, N. Y.—The R. & J. Paper Company has arranged for a change of name to the Davis-Stevenson Paper Corporation.

Battle Creek, Mich.—The Michigan Carton Company has filed notice of increase in capital from 100,000 shares of stock, no par value, to 150,000 shares of stock, no par value.

New York, N. Y.—The Whitfield Paper Works, Inc., a New Jersey corporation, has filed notice of intention to operate in New York, with capital of $200,000.

J. T. Carey Undecided About Running

ALBANY, N. Y., July 13, 1925.—Jeremiah T. Carey, of this city, for more than 18 years president of the International Brotherhood of Papermakers, and ousted from the presidency after one of the most bitter court battles in union history, was non-committal when seen relative to a statement made by one of his followers to the effect that he would head a ticket in opposition to the one which will be headed by M. H. Parker, present head of the Brotherhood. While it is generally known that there has been considerable pressure brought to bear toward inducing Mr. Carey to head the opposition ticket it is also known that up to the present time Mr. Carey has taken the stand that he would prefer some one else to make the run for president. The ticket of the Carey faction in its entirety will, it is expected, be announced in a few days.

Paper union politics are beginning to simmer with the approach of the time for filing of nominations. Mr. Carey during the past week paid a visit to Fort Edward and other paper centers but up to Monday was still undecided about accepting the nomination for president of the Brotherhood. Archie Hickman, of Buffalo, formerly of Deferiet, is visiting paper making sections, at the present time, in the interests of the opposition tickets. Mr. Hickman is said to be slated for a place on the Carey ticket.

With both the Carey and Parker factions martialing their forces for the coming contest every indication points to one of the most bitter union elections in the history of the International Brotherhood of Papermakers.

American Writing Works Out Assessment Plan

HOLYOKE, Mass., July 14, 1925.—A plan to raise $2,000,000 by assessments on holders of common and preferred stock of the American Writing Paper Company, with new issue of certain stocks and bonds, has been worked out in rough outline to retrieve the company from its financial slump. Modification of the plan in some important details may be necessary.

The plan is to assess holders of preferred stock $10 a share and to issue to them $500 in new bonds, five shares of new preferred stock and 50 shares of new common stock for each 100 shares of preferred stock they hold. Common stockholders, under the plan, are to be assessed $5 a share and are to receive, for each 100 shares of common, $250 in new bonds, 2½ shares of new preferred and 25 shares of common stock. Each holder of a $1,000 bond, under the tentative plan, is to receive $500 in new first mortgage bonds, and $500 plus the amount of coupons still due, in a new issue of 7 per cent cumulative preferred.

The company has first mortgage 6 per cent bonds outstanding to the amount of $9,293,000, the interest on which has been in default for about two years. There are 125 shares of preferred and 95,000 shares of common now standing.

Obituary

James W. King

SAUGERTIES, N. Y., July 14, 1925.—Word was received in Saugerties late Thursday afternoon, July 9, by The Tissue Company, of the death of its general sales manager, James W. King, who passed away in the Wesley Hospital, Chicago, Ill., on Thursday.

Mr. King was enroute to the mill from the Pacific Coast and was taken suddenly ill in Chicago on June 5. On Monday, June 8, the doctors decided to operate for acute appendicitis; peritonitis developed immediately together with a diabetic condition which made a very serious condition. Mr. King rallied nicely from the operation and taking a very optimistic view great hopes for his recovery were held, but ten days after the operation there was a sudden change for the worse and since that time he fought a losing battle.

Mr. King, besides being general sales manager was the Pacific coast representative for The Tissue Company and was held in the highest esteem by his associates. He was a salesman of unusual ability and The Tissue Company lost a valuable asset. Mr. King leaves a family to whom the deepest sympathy is extended by his many friends.

Funeral services were held in Springfield, Mass., Monday morning, July 13.

John Gibson, Jr.

John Gibson Jr., president of the Wrenn Paper Company, Middletown, Ohio, according to word received in New York just previous to going to press, died suddenly Wednesday, July 8.

Bellows Falls Bag Factory is Model of Convenience

[FROM OUR REGULAR CORRESPONDENT]

BELLOWS FALLS, Vt., July 13, 1925.—The new paper bag factory annexed to the Moore & Thompson Paper Company is a splendid addition to the industries of Bellows Falls. It is 180 by 160 feet, equally divided between manufacturing and storage, is built of iron, brick and cement and is the last word in modern construction. All is on one floor and the lighting from windows on the sides and skylight overhead is all that could be desired.

There are two electric ventilators which will change all the air in 12 minutes. The heating is by steam from the plant "under the hill."

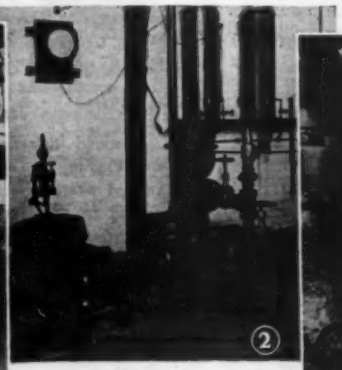
The toilet arrangement for men and women is convenient and sanitary. In fact, the health and convenience of employees is considered at every turn.

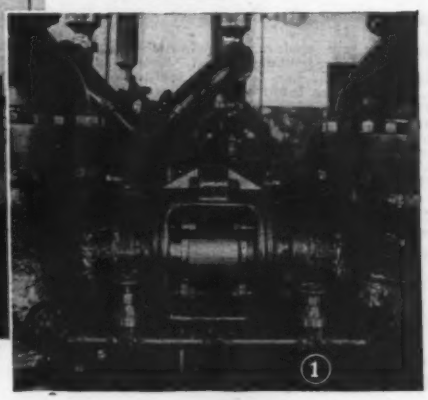
An elaborate sprinkler system has been installed, wet on the manufacturing side of the plant, which will always be heated and dry or air on the storage side which is unheated. All machines will be cleaned by compressed air, and every machine has its own motor, no belts or overhead pulleys.

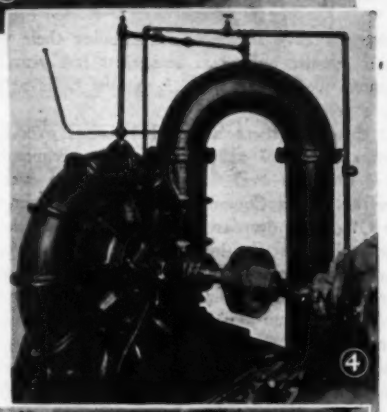
There are at present 18 machines installed and 14 more will be added, making 32 in all; all coming to Bellows Falls from the Brooklyn, N. Y., plant of the Hudson Bag Company. When all machines are running, 75 to 85 men and girls will be employed. The entire output of Kraft paper from the Moore & Thompson plant is used in the new Bellows Falls factory and in the factory of the Hudson Bag Company in Brooklyn.

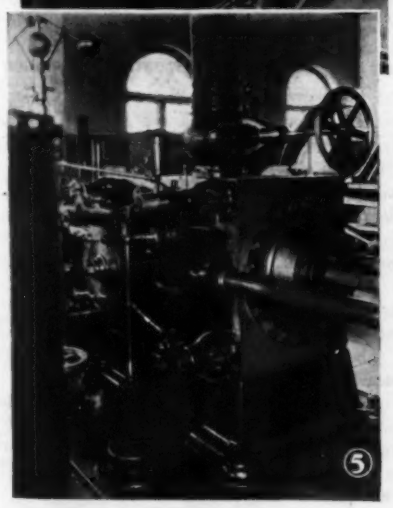
Construction of the new Bag Factory began last November and manufacturing therein began early in May. Martin A. Neff is superintendent of the Bag Factory. He came to Bellows Falls from Rumford, Me., where he was engaged in bag manufacturing for 23 years.

He is very enthusiastic over the arrangement and possibilities of his new factory. The manager of the Moore & Thompson Company is E. Perlman and the paper mill superintendent is A. W. Bronk.









An object lesson for buyers of packings

1. Outside-packed plunger pumps, water pressure 250 lbs.
Pump heads and deck flanges packed with "U. S." Rainbow Sheet Packing.
Plunger packed with "U. S." Royal Flax Packing.

2. Cylinder heads of reciprocating pump packed with "U. S." Rainbow Sheet Packing.
Steam piston rods and valve rods packed with Black Hawk-Hi-heat Metallic Packing.

3. Pump heads, deck flanges and pipe line flanges packed with "U. S." Rainbow Sheet Packing.
High pressure pump valves, Usco valves, Style No. 888.

4. Glands of centrifugal pump packed with "U. S." Centrifugal Pump Packing.

5. Steam rods of Corliss-type engine packed with Black Hawk Hi-heat Metallic Packing.

These photographs were all taken in one of the most up-to-date pumping stations in Pennsylvania. They are good evidence of how well "U. S." Packings, intelligently selected, can fill the varied needs of a modern power plant. "U. S." Packings were adopted as standard three years ago by this plant, as well as by several others under the same ownership.

The wisest buyers of packings need not be told the advantages of standardizing on one line as far as possible. Remember, however, that the service which goes with the sales is fully as important as the quality of the product.

We aim not only to make better packings, but to make them better understood. The user of "U. S." Packings gets expert assistance in choosing them. Our nearest branch is ready to give you this service.

United States Rubber Company

1790 Broadway New York City

Branches in every industrial center

Trade Mark

Trade Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

CRYSTALLOID—No. 196,379. Mid-States Gummed Paper Company, Chicago, Ill. For transparent gelatin paper.

BEAVER—No. 200,165. Ajax Rope Company, Inc., New York City. For manila and sisal rope.

SMITH & DOVE MFG. CO., ANDOVER, MASS., with fanciful design—No. 211,810. Smith & Dove Manufacturing Company, Andover, Mass. For twine.

CRINKLE CREPE ARROW—No. 212,306. The Tuttle Press Company, Appleton, Wis. For crepe paper.

E-Z-TIE—No. 212,696. Plymouth Cordage Company, Plymouth, Mass. For fibrous and textile twine and cord.

ANDOVER—No. 211,628.—Smith & Dove Manufacturing Company, Andover, Mass. For twine.

ROYAL PALM—No. 212,251. The Groover-Stewart Drug Company, Jacksonville, Fla. For writing paper, tablets, envelopes, and cards.

HADDON HALL VELLUM—No. 212,613. Hampshire Paper Company, South Hadley Falls, Mass. For writing and printing paper and mailing envelopes adapted for social and business purposes, and writing and printing paper adapted for announcement purposes.

SWEETONE RADIO—No. 213,381. John Lackner, Long Island City, N. Y. For receptacles in the form of novelty boxes made of paper, wood, cardboard, tin, etc.

CROSSCUT with fanciful design—No. 200,080. Albany Perforated Wrapping Paper Company, Albany, N. Y. For toilet paper.

THE FOREMAN NATIONAL BANK No. 201,553. The Foreman National Bank, Chicago. For negotiable paper.

THE FOREMAN TRUST AND SAVINGS BANK No. 201,554. The Foreman Trust and Savings Bank, Chicago. For negotiable paper.

KASHMIR KRAFT No. 202,477. American Lakes Paper Company, Chicago, Ill. For paper, and particularly such paper as is used for wrapping purposes.

REX BRAND No. 212,098. The Paper Novelty Company, Green Bay, Wis. For paper napkins.

KRAFTOWL No. 212,594. Continental Paper and Bag Mills Corporation, New York City. For paper towels.

MOOSE-HEAD—No. 201,934. Reese & Reese, Baltimore, Md. For wrapping papers.

MILLBROOK—No. 203,667. Frederic T. Burkhardt, Holyoke, Mass. For writing paper.
coming months.

BARCO—No. 205,783. B. A. Railton Company, Chicago. For paper towels, napkins, wax paper, doilies, manila paper, wrapping paper.

BAY WEST FOLDED DOUBLTOWL—No. 207,337. Bay West Paper Company, Green Bay, Wis. For paper towels.

NUFOIL—No. 209,955. Westfield River Paper Company, Inc., Russell, Mass. For wrapping paper.

COMMANDER—No. 210,831. Crown Williamette Paper Company, San Francisco, Calif. For paper bags.

RHINOROP—No. 211,042. The John Leslie Paper Company, Minneapolis, Minn. For wrapping papers.

NATIONAL CATHEDRAL LAWN—No. 214,490. Marcus Ward, Inc., Boston, Mass. For writing paper.

PELICAN PARCHITE—No. 214,202. Continental Paper and Bag Mills Corporation, New York City. For wrapping paper.

Improvement in Patent Office

Decided improvement in the status of work at the Patent Office at Washington, D. C., is shown in the first detailed report submitted to the Secretary of Commerce since the Office was transferred to the Commerce Department on April 1 last.

Despite the receipt of 1,900 more new applications and 30,000 more amendments than during the previous year, Commissioner of Patents Robertson in his statement to Secretary Hoover, reports that the close of the last fiscal period found the Patent Office with 16,000 fewer cases awaiting official action than a year ago.

There were only 43,000 cases pending on June 30, last, against 59,000 a year ago; 72,475 on June 30, 1923; and 67,608 at the end of the fiscal year 1922.

A year ago but one examining division had its work less than three months behind. There are now 5 under 2 months and 14 under 3 months.

Thiry-six divisions have succeeded in reducing their work to a four-month basis against only 2 in this class last year, while 48 others have gotten their work to a 5 months basis against only 8 in this class a year ago.

Last year at this time there were 40 divisions over 5 months, 26 over 6 months, 9 over 7 months and 2 over 8 months. Now there are only 5 divisions over 5 months and none over 6.

According to the Patent Commissioner's report, during the year just closed his Office has decreased the average time that application must await official action by 2 months in new work and 1 month in old work so that the average time that a new application must await to receive official action has been reduced from 5 months to 3, and the average time an amended application must await official action has been reduced from 3.4 months to 2.3 months.

In the absence of Secretary Hoover, Acting Secretary Stephen Davis expressed much satisfaction over the improved conditions.

Russian Paper Output Greatly Increases

The output of the paper industry in the Soviet Union is now over 90 per cent of the pre-war level, but imports of paper have increased nearly 150 per cent in the past year, largely as a result of a great increase in newspaper circulation, according to F. E. Djerzinsky, Chairman of the Supreme Economic Council. The full text of Djerzinsky's report to the recent Federal Congress of Soviets in Moscow has been received by the Russian Information Bureau, Washington, D. C. Referring to the paper industry, he said:

"In the paper industry our plants are working almost at full capacity, and we are face to face with the necessity of building new factories. The country's paper requirements are very large, due in great measure to the rise of cultural standards.

"In 1913 the total daily circulation of Russian newspapers was 3,000,000 copies. On February 1, 1925, it was 7,360,000 copies. The steady increase has naturally caused larger paper imports. Last year 43,000 tons of paper were imported, and this year the imports will reach 105,000 tons."

The Fort William Paper Company, Fort William, Ont., have started their slasher for the season and it will be kept running until winter sets in. The papermakers' strike, however, is still in progress at the time of writing and as far as can be learned without any decisive movement being made toward a settlement of the differences between the men and the company.

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending May 31, 1925, and for the Eleven Months Ended May 31, 1925, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER.

Paper and Manufactures of	May 1924 Quantity	May 1924 Value	May 1925 Quantity	May 1925 Value	Eleven Months Ending May 31 1924 Quantity	Eleven Months Ending May 31 1924 Value	Eleven Months Ending May 31 1925 Quantity	Eleven Months Ending May 31 1925 Value
Paper, except printed matter (total)	.....	$10,517,336	.....	$10,088,947	.....	$108,627,425	.....	$107,989,629
Printing paper—								
Standard news print.....lbs..free	226,523,317	8,516,141	246,913,137	8,762,939	2,451,193,583	92,426,897	2,562,258,123	93,076,753
Imported from—								
Finland	8,929,409	286,332	4,394,546	132,464	65,805,651	2,129,933	57,210,573	1,810,557
Germany	12,026,260	363,049	4,321,331	134,046	104,285,633	3,343,786	49,580,316	1,489,098
Netherlands	361,085	11,738	494,297	15,994	766,589	24,691	1,687,656	55,632
Norway	636,691	25,261	5,700,671	166,081	37,696,390	1,304,148	40,487,032	1,266,145
Sweden	4,789,303	146,529	13,343,327	398,743	100,076,774	3,218,760	138,546,648	4,269,939
Canada	199,471,162	7,673,743	218,183,391	7,901,357	2,136,317,605	82,209,948	2,260,845,108	83,728,408
Other countries	315,407	9,489	475,574	14,254	6,244,941	195,631	13,900,790	456,974
All other, n. e. s.....lbs..dut.	3,660,375	143,455	1,904,124	92,629	21,033,890	927,310	22,460,914	1,018,408
Grease-proof and water-proof papers.lbs..dut.	100,619	13,530	194,738	27,129	2,426,270	2,232,900	1,446,117	181,827
Wrapping paper.....lbs..dut.	.....	.....	.....	.....	[1]44,709,325	[1]1,939,824	.....	.....
Kraft wrapping paper.....lbs..dut.	3,150,552	117,680	829,427	36,316	[2]15,486,568	[2]578,047	18,543,193	748,668
All other, wrapping paper.....lbs..dut.	3,069,517	119,093	412,502	19,335	[2]10,270,563	[2]391,455	11,402,008	468,988
Writing, drawing, bond, etc.....lbs..dut.	236,154	50,517	199,101	51,614	2,482,995	479,500	2,843,396	640,832
Surface coated.....lbs..dut.	115,247	30,718	118,955	51,479	1,350,492	310,923	1,729,881	464,624
Tissue paper.....lbs..dut.	133,406	55,987	277,692	139,676	1,905,576	804,014	2,646,165	1,067,569
Paper boards—								
Pulp boards in rolls.....lbs..dut.	9,334,886	258,062	5,638,666	143,943	74,983,154	2,116,871	64,285,769	1,720,971
Other paper boards, n. e. s.....lbs..dut.	4,842,164	106,507	2,120,321	50,034	25,709,565	694,687	29,318,326	687,263
Cigarette paper, cigarette books and covers.....lbs..dut.	1,979,782	626,029	866,223	208,572	10,244,893	2,689,239	8,565,021	2,377,435
Photographic paper.....lbs..dut.	421,734	86,477	391,302	90,060	2,682,570	553,856	2,888,675	623,716
Hanging paper.....lbs..dut.	644,502	33,728	284,435	32,603	13,244,878	613,291	9,178,935	511,573
Paper boxes.....lbs..dut.	139,793	94,210	211,144	119,053	[3]604,981	[3]385,368	2,119,290	1,354,660
Decalcomania, not printed.....lbs..free	45,203	9,698	36,710	9,677	392,461	98,242	473,908	117,981
All other.....dut.	.....	255,504	.....	253,888	.....	3,385,001	.....	2,928,361
Books and other printed matter (total)	.....	1,049,417	.....	1,082,519	.....	8,285,706	.....	10,289,200
Books and pamphlets in foreign languages.....lbs..free	227,499	143,950	139,236	73,245	1,867,779	1,029,611	2,075,175	1,437,501
Books, maps, music, etc., 20 years old.....lbs..free	41,590	416,259	28,493	469,164	325,957	1,457,058	362,835	2,418,262
Other books, etc.....lbs..free	195,236	127,390	241,803	131,935	2,025,306	1,342,622	2,346,926	1,718,285
Books, pamphlets and music, n. e. s.lbs..dut.	294,075	195,663	258,370	209,747	3,242,031	2,228,375	3,048,806	2,306,456
Maps, charts, and other printed matter, n. e. s.....dut.	.....	60,239	.....	67,997	.....	741,743	.....	816,400
Lithographically printed matter, n. e. s.—								
Cigar bands, labels and flaps....lbs..dut.	2,939	4,546	9,855	14,390	193,371	180,649	133,554	122,965
Decalcomanias.....lbs..dut.	24,317	34,313	43,487	35,294	224,339	317,838	267,751	366,846
All other.....dut.	.....	67,057	.....	80,747	.....	987,810	.....	1,102,485

CRUDE PAPER STOCK.

Rags for paper stock.....lbs..free	37,542,203	845,218	33,630,833	981,210	388,169,455	7,586,007	537,995,450	14,435,054
Waste bagging, waste paper, etc...lbs..free	7,750,219	79,893	8,265,289	142,903	92,633,599	1,101,096	109,996,860	1,598,675
Old rope and all other paper stock.lbs..free	10,153,294	530,332	6,701,454	346,155	89,049,046	4,510,864	75,668,648	4,108,029

WOOD PULP.

Mechanically ground wood pulp..tons..free	11,867	419,618	29,125	766,614	221,316	7,663,655	239,940	7,410,175
Chemical wood pulp—								
Sulphite, unbleached.....tons..free	33,380	1,692,398	41,647	2,224,722	419,403	24,426,347	563,578	29,956,184
Sulphite, bleached.....tons..free	20,236	1,550,440	21,849	1,713,597	221,791	18,670,278	283,811	21,356,045
Total sulphite.....tons	53,616	3,242,838	63,496	3,938,319	641,194	43,096,625	847,389	51,312,229
Imported from—								
Finland	9,890	493,040	4,272	175,668	50,591	2,977,926	52,888	2,686,859
Germany	6,961	378,826	3,705	236,541	48,701	3,300,557	75,888	4,477,841
Norway	1,075	57,039	4,343	342,474	51,295	4,161,006	71,142	4,993,367
Sweden	7,925	478,192	18,818	1,146,107	192,636	12,264,352	297,158	16,658,234
Canada	23,964	1,621,318	29,973	1,909,862	277,058	19,346,306	318,389	20,698,283
Other countries	3,801	214,423	2,385	127,667	20,913	1,046,478	31,924	1,797,645
Sulphate pulp, unbleached (kraft pulp).....tons..free	19,064	1,125,917	23,770	1,436,067	228,700	14,390,135	283,646	16,177,611
Imported from—								
Finland	2,220	98,774	361	18,819	9,244	518,329	12,938	634,561
Norway	300	15,361	184	10,857	10,036	552,346	11,703	645,516
Sweden	2,500	139,180	12,787	724,639	82,484	4,945,693	141,202	7,485,435
Canada	13,524	850,415	10,340	676,852	124,660	8,231,688	113,151	7,166,470
Other countries	520	22,187	98	4,900	2,276	142,079	4,652	245,629
Sulphate pulp, bleached.....tons..free	1,200	77,189	3,167	189,997	7,063	483,326	31,483	1,784,776
Other pulp.....tons..free	89	7,149	248	11,837	6,540	398,419	2,067	138,753

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.

Colors, dyes, stains, color acids, and color basis, n. e. s.....lbs..dut.	186,126	219,891	515,925	710,347	2,831,016	3,715,876	4,612,821	6,316,027
Imported from—								
France	14,615	22,288	12,508	16,614	183,066	291,209	115,527	166,367
Germany	66,630	77,534	235,718	305,157	1,393,343	1,667,316	2,344,214	3,297,160
Italy	9,072	13,852	27,746	31,517	185,741	256,422	189,602	250,591
Switzerland	72,266	85,938	176,054	262,656	785,092	1,171,790	1,459,336	1,978,789

[1]July 1 to Dec. 31, 1923. [2]Beginning Jan. 1, 1924. [3]Beginning Jan. 1, 1925.

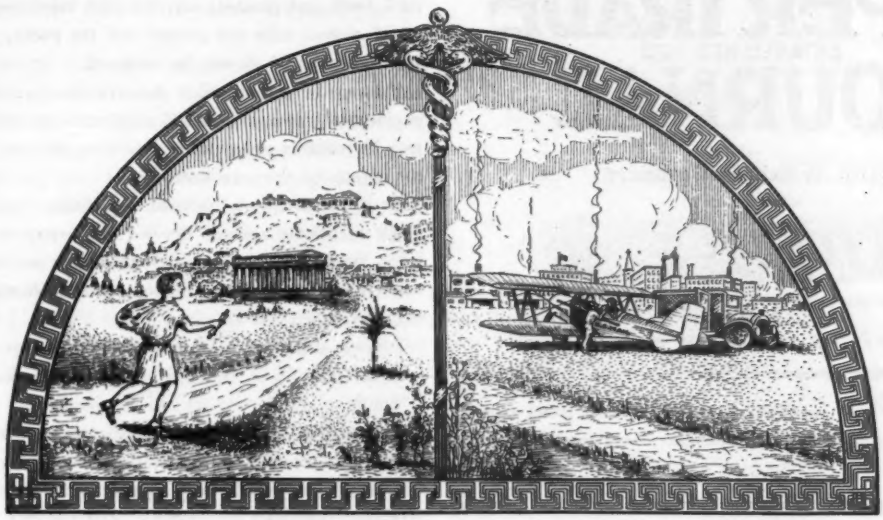
(*Continued on page* 44)

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page* 43)

Paper and Manufactures of	May 1924 Quantity	May 1924 Value	May 1925 Quantity	May 1925 Value	Eleven Months Ending May 31 1924 Quantity	Eleven Months Ending May 31 1924 Value	Eleven Months Ending May 31 1925 Quantity	Eleven Months Ending May 31 1925 Value
United Kingdom	10,549	$10,330	22,349	$18,612	93,726	$94,988	158,893	$142,838
Other countries	12,994	9,949	41,550	75,791	190,048	234,151	345,249	480,282
Casein or lactarine.....lbs..dut.	1,083,988	75,090	2,672,738	219,623	14,931,443	1,763,942	17,772,191	1,306,294
Kaolin, china, and paper clay.....tons..dut.	27,881	277,259	20,366	216,449	259,175	2,707,569	298,950	2,882,828
EXPORTS—PAPER								
Paper, except printed matter (total).....	.....	1,994,449	.....	2,223,072	.....	22,055,475	.....	21,588,601
Printing paper—								
Newsprint paper .....lbs.	2,842,210	140,293	4,322,086	199,385	29,828,845	1,496,096	32,794,335	1,587,013
Exported to—								
Canada .....lbs.	31,648	2,630	29,535	2,715	1,116,329	90,676	882,177	63,617
Central America .....lbs.	83,164	4,112	82,450	4,992	910,196	45,720	728,089	39,366
Mexico .....lbs.	277,124	16,050	68,033	3,867	1,772,320	92,632	1,861,304	95,661
Cuba .....lbs.	1,940,953	85,499	2,799,139	126,396	17,877,128	817,262	15,954,452	682,483
South America .....lbs.	146,386	8,884	690,887	33,057	1,637,626	89,829	5,596,754	274,780
Japan .....lbs.	133,393	10,352	.....	.....	1,263,510	82,574	433,146	30,948
Philippine Islands .....lbs.	59,221	4,274	335,990	15,294	3,594,209	174,613	4,062,888	186,332
Other countries .....lbs.	170,321	8,492	316,052	13,064	1,657,727	102,790	3,275,525	213,826
Book paper, not coated .....lbs.	1,356,764	162,315	1,698,159	200,593	19,020,063	2,186,916	18,025,786	1,972,235
Exported to—								
United Kingdom .....lbs.	75,307	17,656	29,397	5,215	704,732	137,511	340,579	70,168
Canada .....lbs.	189,004	21,870	247,431	36,153	1,825,778	235,595	1,811,689	222,477
Central America .....lbs.	51,637	6,531	42,117	4,729	751,434	88,483	592,125	64,371
Mexico .....lbs.	186,822	15,971	156,345	19,571	1,384,312	158,151	2,119,746	241,185
Cuba .....lbs.	315,318	37,981	442,637	47,306	4,031,613	448,893	4,151,079	429,751
Argentina .....lbs.	97,020	8,742	69,713	5,477	793,030	95,414	572,747	58,953
Brazil .....lbs.	28,600	3,865	31,460	2,783	513,464	61,390	306,789	37,053
Venezuela .....lbs.	4,425	444	65,266	7,360	500,508	53,166	457,912	49,482
Other South America .....lbs.	56,160	6,266	157,834	14,659	997,148	121,752	1,256,260	134,022
China .....lbs.	98,535	12,279	110,999	18,106	2,339,636	229,773	3,556,571	340,322
Japan .....lbs.	9,716	1,540	80,395	9,217	1,365,419	138,673	334,558	37,823
Philippine Islands .....lbs.	131,266	13,182	66,886	5,804	1,966,359	182,737	1,135,599	107,384
Australia .....lbs.	33,876	4,937	72,970	8,042	742,442	95,983	481,368	53,605
Other countries .....lbs.	79,078	11,051	124,709	16,171	1,104,188	139,395	908,764	125,639
Cover paper .....lbs.	78,247	12,711	89,107	17,065	915,145	163,816	963,563	186,349
Grease proof and waterproof paper.....lbs.	88,991	11,993	151,694	20,392	1,578,655	201,506	1,494,043	178,489
Wrapping paper—								
Kraft paper .....lbs.	72,042	12,509	89,260	7,938	777,850	83,284	555,404	57,091
Other wrapping .....lbs.	2,251,539	161,200	2,799,033	230,391	22,261,735	1,860,730	24,245,621	1,884,018
Surface-coated paper .....lbs.	264,596	39,454	517,587	76,322	3,158,307	491,243	3,200,576	463,109
Tissue and crêpe paper .....lbs.	179,188	54,064	267,245	70,240	2,961,674	761,706	3,045,179	817,905
Toilet paper .....lbs.	558,008	57,095	572,939	59,761	3,974,586	450,116	4,320,119	518,889
Paper towels and napkins .....lbs.	122,499	18,831	93,168	13,865	1,157,274	199,802	1,232,542	199,087
Box board .....lbs.	.....	.....	851,253	29,119	.....	.....	[2]4,564,634	[2]178,338
Bristols and bristol board .....lbs.	170,045	13,388	66,975	8,007	1,259,549	115,387	746,793	93,998
Other paper board and strawboard.....lbs.	5,513,150	225,352	2,554,170	128,846	60,386,345	2,634,611	46,662,221	1,853,992
Sheathing and building paper .....lbs.	472,723	21,630	1,154,619	50,399	4,124,292	189,548	10,245,364	488,474
Wall board of paper or pulp.....Sq. ft.	1,157,286	48,528	1,483,512	43,351	18,067,426	624,897	13,729,941	467,347
Blotting paper .....lbs.	159,762	20,354	253,103	30,683	[1]1,054,939	[1]130,019	2,497,082	296,574
Filing folders, index cards, and other office forms .....lbs.	31,129	11,864	49,430	17,162	[1]191,784	[1]69,559	486,772	157,672
Papeteries (fancy writing paper).....lbs.	34,606	13,385	40,754	13,913	343,645	140,587	453,707	154,482
Other writing paper .....lbs.	396,164	66,760	271,968	46,378	4,865,366	850,464	3,036,604	506,341
Cigarette paper and books.....lbs.	76,610	32,024	45,324	14,039	853,426	295,274	509,910	160,261
Photographic paper .....lbs.	164,503	177,087	165,091	147,528	1,381,975	1,335,081	1,465,090	1,310,787
Paper hangings (wall paper) .....yards	1,617,785	35,894	1,617,182	45,216	23,408,538	597,096	23,482,970	587,088
Paper bags .....lbs.	866,812	81,635	1,378,228	118,078	8,081,036	848,929	10,889,634	936,551
Boxes and cartons .....lbs.	920,935	91,598	1,654,871	124,460	10,951,106	1,021,750	13,172,034	1,115,031
Carbon paper .....lbs.	86,412	63,836	94,635	81,140	822,843	635,112	863,320	710,420
Envelopes .....lbs.	264,981	49,147	269,153	48,138	2,427,306	487,434	2,396,392	453,323
Cash register and adding machine paper.lbs.	134,890	12,965	103,316	10,911	1,210,416	135,507	1,301,261	138,309
Other paper and paper products.....lbs.	1,802,294	358,537	1,813,959	369,752	24,709,447	4,049,005	34,087,151	4,115,728
Books, maps, pictures, and other printed matter (total)	.....	1,690,239	.....	1,648,761	.....	18,115,646	.....	18,827,809
Books and pamphlets .....lbs.	2,723,935	802,369	3,150,952	738,694	28,143,551	8,786,060	35,455,233	9,353,243
Maps and charts .....lbs.	14,075	19,481	22,528	24,904	146,283	154,630	200,174	196,234
Music in books or sheets .....lbs.	42,353	31,100	28,830	18,240	589,671	344,013	528,481	321,450
Souvenir post cards .....lbs.	16,274	6,293	28,923	12,362	499,124	197,278	358,493	190,560
Lithographically printed matter, except post cards and maps .....lbs.	230,024	116,846	255,132	186,090	1,959,254	1,455,633	2,501,688	1,755,887
Playing cards .....packs	528,055	76,779	592,848	56,722	6,657,590	750,206	6,347,882	673,776
Other printed matter .....lbs.	1,499,203	637,371	1,965,545	611,749	17,507,454	6,427,826	17,931,451	6,336,659
WOOD PULP AND PAPER STOCK.								
Sulphite wood pulp .....tons	2,307	141,286	1,777	110,176	15,076	875,904	20,760	1,231,542
Soda wood pulp .....tons	186	12,468	113	9,235	1,771	167,308	1,766	165,153
Other wood pulp .....tons	554	92,822	143	7,996	3,191	239,819	8,599	916,521
Rags, and other paper stock.....lbs.	13,756,176	239,645	18,702,211	304,118	118,897,240	1,980,479	132,981,444	2,222,521
PAPER AND PULP MILL MACHINERY.								
Paper and pulp mill machinery.....lbs.	474,094	134,082	545,658	120,064	8,476,199	1 761,590	6,749,166	1,470,296

[1]Jan. 1 to May 31. [2]July 1 to Dec. 31.



Giving Wings to the Written Word

When Greek met Greek in the ancient days and business negotiations were started, the final decision usually required person-to-person conference. When it happened that the outcome was delayed and the closing date of the option was near at hand, then indeed did the letter transport of those days reveal its deficiency.

Many a time did the Attic business man write his belated acceptance upon a piece of treated sheepskin imported from Pergamum, roll this about a rounded stick, seal it with a wax impression from his official ring, and entrust it to a fleet-footed son of Hermes. Woe to the business deal if the messenger developed a weak heart or a stone-bruised heel!

The time that it required Athenian "special delivery" to convey a message from that center of culture to Megara, 30 miles away, now serves as quite enough for the winged descendants of Kitty Hawk to lift a half-ton of modern correspondence across the roofs and tree tops between New York and Chicago.

No longer does the mild-mannered sheep supply the basis of written records and the interchange of business agreements. Vegetable fibres—cellulose from shrubs and trees—white, plentiful, and inexpensive, now carry the business world's "yes" and "no".

Hammermill Paper Company

Erie, Pennsylvania

PAPER TRADE JOURNAL
ESTABLISHED 1872

With Which Is Combined

PAPER

The Magazine of the Paper Industry

HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

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PINE INSTITUTE OF AMERICA

Solution of many of the problems incidental to the pulpwood and paper industry of the South and the additional development of the paper industry in that section are expected to be two of the outstanding results of the formation of the Pine Institute of America at Atlanta, Ga., several weeks ago.

The new organization has been formed after much careful thought and consideration by representative men in the pine industry of the South headed by Mr. O. H. L. Wernicke.

The proposed activities of the new association include many features which cannot fail greatly to benefit the rapidly growing pulp and paper industry of the South. These include:

To found, and to conduct upon scientific principles, an engineering and chemical institute of learning and practice which shall serve and advance the legitimate interests of the owners of cutover lands, the producers of gum rosin and turpentine, and of factors handling the same, and of dealers and brokers therein and exporters thereof, the manufacturers and distributors of wood tar products, the manufacturers of wood rosin and wood turpentine, and of others interested in such lands and products with particular reference to the public welfare.

To study and develop reforestation of cutover lands, and to demonstrate the means and methods of utilizing said lands most advantageously to those interested therein.

To co-ordinate in a legitimate way and give added force to the efforts of those interested in the utilization of such lands and in the production, handling, sale, distribution and export of such products.

To promote and conduct chemical and other tests and experiments designed to increase the uses of and expand the markets for such products by raising their standard of quality and enlarging their usefulness.

To gather and assemble, and to distribute dependable and serviceable information and statistics relative to such lands and products and the disposition and uses thereof, and regarding laws and trade customs and practices relating to, and patents and processes having reference to, any of such products.

To provide a practical college as an instrumentality of service, an available agency and medium through which those interested in such lands and products may establish better business relations and social contact with one another and the public, whereby the legitimate interests of all may be advanced.

To employ, and to utilize the services of such trained experts in engineering, chemistry and kindred sciences, and other persons, as may be requisite or proper in furthering the aims and accomplishing the objects of the organization.

To cooperate with National and State departments and other public or private agencies devoted to forestry and the utilization of forest products, including schools, colleges and universities, so that added force may be given to, and wider application found for, their purposes.

To own such real estate and personal property as may be necessary or desirable to the carrying out of the above objects.

"Southern pine forests are rapidly diminishing" says the committee of organization. "Originally they extended, almost unbroken, from Virginia to the Mexican border. They were first depleted by the clearing of land for farming purposes. In more recent years they have been cut away by sawmills. The methods followed for many years in working the trees for turpentine were unnecessarily wasteful and destructive. All this was natural and inevitable in a new and rapidly developing country where so many forms of natural wealth abounded.

"In more recent years it has become evident to every intelligent mind that different methods must be adopted and pursued both in lumbering operations and in the naval stores industry if we are to save our pine forests from exhaustion. In short, the naval stores people and lumber people are literally destroying their own business and exterminating their respective industries. Self-preservation, self-interest, and common sense, to say nothing of a decent regard for the future welfare of our country and the preservation of business opportunities for ourselves and our own children, alike demand that our pine forests be no longer suffered to diminish but that on the contrary they shall be increased to meet the needs of increasing population and of a rapidly expanding commerce.

"In the older and more settled countries of the world reforestation has long been practiced. It is not an experiment. It is an established and successful practice. In the older sections of the United States it is coming rapidly into adoption. Even in the lumbering regions of the Pacific Coast it is now being pursued to a very large extent. But we continue to consume the corpus and the income of our forestry estate. There are millions of acres of cutover lands in the South. They were once very valuable for their timber and can be restored to greater values. They are now largely worthless except as a speculation. And yet all the experts agree that it would be comparatively simple to make those barren lands a source of continual income and of steadily increasing value by the adoption of a few laws wisely framed, by the inculcation of a few simple and inexpensive habits and practices in the way of preventing forest fires, keeping hogs out of the woods and giving nature a chance to restock and replant our waste places with young pines, and then giving the young pines a chance to grow. It would be so easy to learn from older countries how all of these things may be done if we can only make up our minds to try.

"The demand for lumber, and consequently the value of all forest

products, will inevitably increase with the growth of our population. The housing problem will be always with us. It is inevitable, therefore, that the grower of pine trees will always have a market for his product.

The chemical products of the pine tree, however, are susceptible to an almost infinite variety of uses. According to a compilation made by the Bureau of Chemistry, United States Department of Agriculture, there are said to be over 200 commercially valuable products made from coal tar. If chemistry can accomplish that result from coal tar the chemical possibilities in turpentine and rosin must be practically immeasurable. There can scarcely be any doubt that the uses of both turpentine and rosin could be multiplied many times, and the value of those products greatly enhanced and the consumption doubled, trebled and quadrupled if capable chemists are given the time and the means and the necessary support and encouragement for the study and exploitation of these products of the pine tree.

"There are already numerous agencies and trade associations, private corporations and public bureaus and departments at work on the problems that must be met and solved before our pine forests and our pine lands can be properly developed and most effectively utilized. There is, however, a lack of adequate co-ordination of effort. There is diversity instead of unity; there is diffusion rather than concentration; there are individual stars but no teamwork.

"The Pine Institute of America is intended to be the switchboard for all these unrelated activities and movements; it is to be the Associated Press, so to speak, by which all forms of information relating to these kindred subjects and allied interests will be assembled and thence distributed to everyone everywhere who may have an interest in such matters."

The committee in conclusion states that if the plan for the new association be grasped firmly and fearlessly, and the necessary means be provided with liberality and confidence a new industrial era will yield rich rewards to all who are interested in the pine tree and its products.

Michigan Paper Mills Make Improvements

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., July 14, 1925.—Three paper mill contracts of major proportions are being handled at this time by the Kalamazoo Sheet Metal Company, according to Jacob Temple, president of the concern. The acid vats at the King Division of the Allied Papers are being relined with eight pound lead, while a new ventilating system is being placed in the No. 1 Bardeen mill in Otsego. The third job is the installation of copper piping to replace iron piping in the Lee Paper Company's plant in Vicksburg. These pipes carry stock from the beaters to the chests and thence to the paper machines.

The Watervliet Paper Company has awarded a contract to George Grady, Grand Rapids, to place two concrete wells that will have a capacity of 2,073,000 gallons of water daily.

Canadian Paperboard Co. Taylor Stoker

The Canada Paperboard Company, Ltd., of Montreal, has purchased from the Taylor Stoker Co., Ltd., of Montreal, one 5-retort, 17-tuyere, Type "H" Taylor stoker for installation in its paper mill in Montreal. Kerry & Chace, Ltd. of Toronto, are the engineers. The Taylor stoker is manufactured in the United States by the American Engineering Company, of Philadelphia.

Wisconsin Mills Want Cheaper Rates on Salt Cake

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, July 14, 1925.—On July 2 and 3 the Interstate Commerce Commission held a hearing in Chicago on I. & S. Docket No. 2437, covering rates on salt cake from producing points in California and Arizona to the Wisconsin paper mill district.

As such points as McKittrick, Cal., and Clarkdale, Ariz., there is a natural deposit of salt cake which in some respects is of greater value to the sulphate pulp manufacturer than the manufactured salt cake produced by the chemical manufacturing companies. Mills in Wisconsin have experimented with the natural product for some time past and finding it to be better suited to their purposes have placed numerous orders and some contracts. This in turn has tended to reduce the price of manufactured salt cake, and because of that situation the manufacturers have endeavored to secure advances in the trans-continental freight rate from the California and Arizona points to the Wisconsin mills.

The Wisconsin railroads, serving the paper and paper mills, withdrew from participation in a rate of 60 cents per 100 pounds applicable from the California and Arizona points, thus substantially increasing the rate from those points to the Wisconsin destination. The Wisconsin mills protested against this increase and secured suspension of the tariffs. At the hearing it was claimed that if the trans-continental rate is increased the manufacturers of salt cake in the central district will take advantage of that situation by increasing the price of their cake to the consumer and it is this possibility that the latter is fighting against.

The carriers claim that the present rate of 60 cents is unremunerative and that they would get greater earnings for the transportation of salt cake from the Chicago district. If their attitude prevails and the wish of the manufacturers of salt cake is granted the effect will be to eliminate the sale of natural salt cake in the Wisconsin market and to the detriment of manufacturers of sulphate pulp and paper. The entire case is now before the Interstate Commerce Commission for disposition and the fixing of just and reasonable rates to all concerned.

B. F. Perkins Award Building Contracts

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 14, 1925.—B. F. Perkins & Son, Inc., manufacturers of paper mill and textile machinery, last week awarded the contracts for two additional buildings, to Fred T. Ley Company of Springfield. The buildings will be erected on the Perkins property in Willimansett. One building is 80 by 147 feet, two stories high; the other is 80 by 260 feet and one-story machine shop type. Actual building operations will be started this week. The fire protection and heating equipment will be done by the Holyoke Valve and Hydrant Company; the plumbing by E. H. Friedrich Company of this city; the boilers installed by the B. M. Dillon Company of Fitchburg; the chimney erected by the American Chimney corporation of Boston and the 10-ton Shaw crane by the Niles Work of Manning, Maxwell & Moore.

Southern Kraft Manufacturers Meet

The Southern Kraft Manufacturers Association held its annual meeting at the Hotel Waldorf-Astoria, New York, Tuesday of last week. H. W. Ellerson, president of the association presiding.

New officers were elected as follows: president, Col. W. H. Sullivan, vice president of the Bogalusa Paper Company; vice president, H. Lutcher Brown, president of the Brown Paper Mill Company; secretary-treasurer, C. E. Dobson.

Col. A. C. Goodyear, president of the Bogalusa Paper Company, gave an interesting talk regarding his investigations of the paper and pulp industry in Norway, Sweden, Finland and Germany. A new constitution was adopted.

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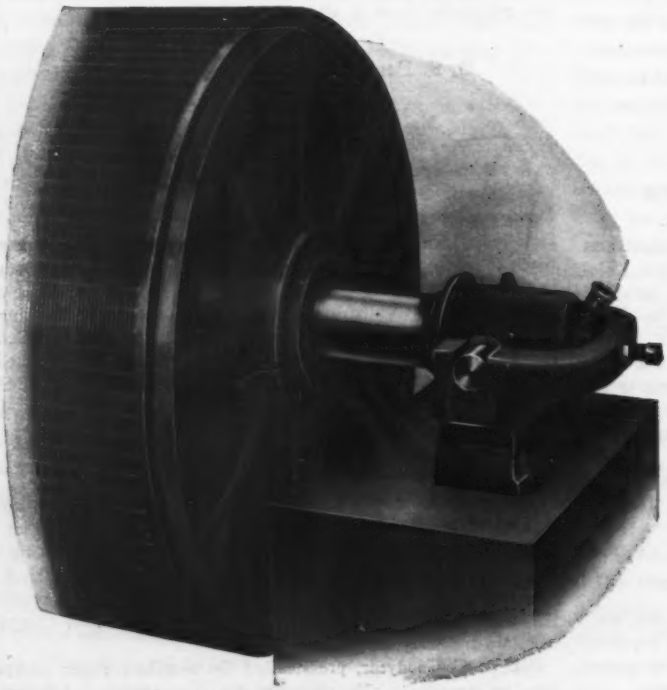

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

Micrography of Sweet Gum Pulp*

By L. Vidal

Liquidambar Styraciflua L., is the botanical name of the *sweet gum*, or *gum*, a beautiful tree somewhat similar to the sycamore, which is found in various parts of the United States. It is best known because it furnishes a gummy secretion or balm, which is used in medicine and is known as American storax. The wood is heavy, hard, close-grained and rather highly colored; it is used chiefly for making paving blocks, but a certain quantity is used for paper making. By cooking with soda it furnishes a bleachable pulp, somewhat similar to that obtained from poplar.

Consumption in U. S. A.

The amount of pulp made from it in the United States, though small, is not altogether negligible. According to statistics of the U. S. Forest Service for the year 1916 the paper industry consumed 37,000 cords of gum wood, which is greater than that of the other deciduous woods, with the exception of poplar.

It is evident that this pulp will be met in some papers of American make, and yet it would be rather difficult to identify it as its microscopic structure is practically unknown. There have been published brief notices on the histology of the raw wood, but the micrography of the pulp has never been studied to our knowledge.

Through the courtesy of Professor Mirande I was able to secure a sample of wood from a tree which was cut down in the botanical gardens at Grenoble. It is true that it was not the American species, *Liquidambar Styraciflua*, but *L. Orientale*, which is native of Asia Minor and from which is obtained officinal storax. Though the two species are very similar, they are not identical, and it is quite possible that they would yield commercial products with appreciably different properties.

We shall therefore consider the product which we obtained in the laboratory only from the standpoint of its microscopic structure, the essential characteristics of which are practically unaffected by differences in species, soil, climate or cultivation.

Characteristic Structure

The structure is characteristic, so that this pulp can readily be differtiated from the other wood pulps, even those which are used but seldom in paper making. As a matter of fact, to us it proved more interesting than surprising; for those who are familiar with the botanical affinities of Liquidambar could have predicted it, just as the properties of a metal can be predicted when its position in Mendelieff's periodic table of elements is known.

The pulp is relatively fibrous, and though not very long it is not short enough to be considered merely as a filler stock.

The fibers are almost cylindrical, scarcely flattened, and thick-walled. Their length varies from 1 to 1.7 millimeters, averaging about 1.4. The diameter is from 15 to 30 one-thousandths of a millimeter, with an average of about 20. The fiber wall is quite thick and has but a few small, elongated pits. The central canal, or lumen, is always very small. The fibers are very regular in shape, free from constrictions or appreciable deformations: they consist of cylinders or semi-cylinders with gradually tapering ends, similar to those of autumn fibers of poplar, aspen or resinous woods. There are practically no thin-walled, ribbon-shaped fibers.

There are numerous, very long, narrow and very transparent vessels. Their length is highly characteristic, being about 1 millimeter and going as high as 1.4 millimeters. Their width, measured flat, is from 40 to 70 one-thousandths of a millimeter, exceptionally going as high as 80. They are ribbon-shaped and the ends narrow down but slightly, if at all.

The most characteristic feature, which has already been noted by those who study the histology of wood (Solereder, *Anatomie Systématique des Dicotylédones*, page 374), is the shape of the the terminal opening. As it is inclined to the axis of the vessel, it is eliptical, and moreover it has a number of bars which form a sort of grating. There are never less than a dozen of these bars, and usually about 20; Solereder gives 22 as a maximum, which agrees with our own observations. These bars are coarser than those of birch or of alder, but finer than those of tulip wood. They are generally parallel, except when accidentally deformed.

As the opening is not always at the very end of the vessel, there is usually a terminal appendix, which can be of varying length and is shaped like the finger of a glove. It sometimes happens, as can be seen in the figure, that the opening is situated near the middle of the vessel, so that the appendix is very long, as much as half a millimeter.

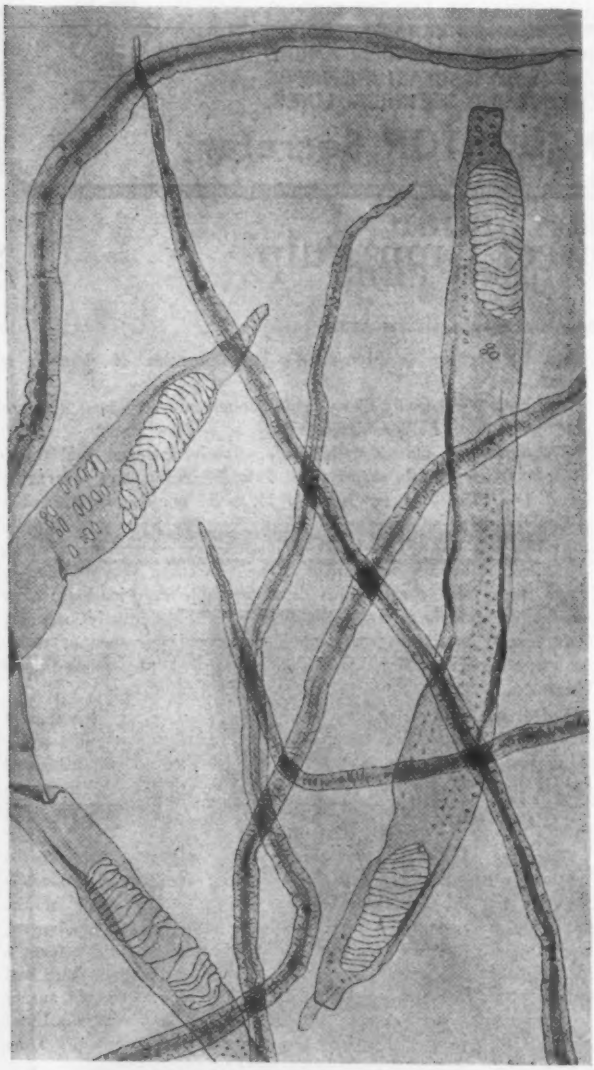
The walls of the vessel are very thin, very delicate and transparent, so that it has but few pits, and these are quite small. There are both plain and bordered pits. The bordered pits are small, and elliptical in shape, being formed of two concentric ellipses which are both plainly visible in the raw wood, but the outer one of which is almost completely destroyed when the

* Translated from *Le Moniteur de la Papeterie Française* lvi, 204-205, May 1st, 1925, by A. Papineau-Couture.

wood is cooked. These bordered pits occur either singly or in groups, forming a sort of honeycomb, just the same as in aspen only considerably smaller. The plain pits are somewhat larger than the bordered ones, and are also elliptical in shape. They are often found in square or rectangular patches, which plainly correspond to the contact of the medullary rays.

Resemble Sycamore Pulp

The medullary rays themselves are long and rectangular in



MICROGRAPHY OF SWEET GUM PULP

shape, and have small pits. They are not numerous and have no very striking features.

Such are the microscopic characteristics of the pulp produced from sweet gum. They resemble those of sycamore pulp which I described a few years ago (*La Papeterie* xlii, 434-439, May 25, 1920). The fibers are of approximately the same shape and size in both cases, and both are thick-walled. The similarity is not so great in the case of the vessels. Those of sycamore are sometimes grated and sometimes not, and at times one of the openings of a vessel is grated while the other is not. But with sweet gum all the openings are grated and moreover the pits are smaller.

Of all the woods used in paper making, only about half a dozen have grated vessels, which could be confused with those of gum wood. They are:

(1) Sycamore and Beech, which have both grated and ungrated vessels;

(2) Birch, Alder, Tulip wood and Tupelo, which always have grated vessels.

Through a rather strange coincidence, all these woods, several of which are not found in Europe, are used for paper making in the United States, and therefore occur in paper in admixture with gum. Is it therefore not a waste of time to indicate how they can be differentiated from the latter.

Sycamore is especially liable to be mistaken for sweet gum, or vice versa, because the fibers of the two are practically identical; but the ungrated vessels of sycamore (which are much more numerous than the grated ones) will readily allow of distinguishing between the two.

Beech fibers are smaller, shorter and more delicate; most of the vessels are ungrated, the grated vessels, which are formed in autumn, being very few in number.

Birch and alder have flat, ribbon-like fibers, with thin, transparent walls. The vessels have gratings made up of numerous very fine and very delicate bars; and moreover the essential characteristic of these vessels is the exceedingly large number of pits, which, especially in the case of birch, are very fine and close together.

Tulip wood, like the two preceding woods, has flat thin-walled fibers, which, however, are appreciably longer. The vessels are grated, but the gratings are generally made up of only half a dozen bars, or so. The pits are very much larger than those of sweet gum.

Finally, tupelo fibers are exceptionally wide, up to 80 one-thousandths of a millimeter, quite flat and very thin-walled. They can hardly be mistaken for those of any other deciduous wood an despecially not for those of gum wood. The vessels, on the other hand, are quite similar to those of gum: they are very long; the terminal opening is inclined to the axis and consequently the grating has numerous bars, as many as thirty and more; and the pits are quite numerous and close together.

We trust that the above description may be helpful in identifying this pulp, which possesses valuable characteristics as a filler, and that our indications will allow of distinguishing it from other fibers with which it may be associated in paper.

Mammoth Globe Showing Dorr Equipment

Although the idea of keeping a geographical record of equipment installations by means of maps and vari-colored map tacks is by no means a new one, the Dorr Company has recently enlarged upon this idea in quite a novel way.

The company has had built a mammoth globe, or map of the world, 4 feet in diameter and standing on its mounting about 5 feet 6 inches high. The globe is so mounted that it may be revolved by a small motor.

The many fields to which Door equipment is applied, are represented by different colored pins, and owing to the unusual size of the globe, the far-flung activities of the company are very forcibly illustrated. The fact that more than 2,000 pins are distributed through over 40 different countries will give some idea of the wide distribution of Door equipment.

The globe was one of the features of the recent Chemical Equipment Exposition in Providence.

E. T. Bellew Goes With Fidalgo Pulp Mfg. Co.

E. T. Bellew of Appleton, Wis., a 1924 graduate in Chemical Engineering at University of Wisconsin, a Junior Member of TAPPI, has gone to Anacortes, Wash., where he has secured a position with Fidalgo Pulp Manufacturing Company.

Paper Colors and Color Testing*

The aniline colors, which are made synthetically from ingredients contained in coal tar, may be divided into six classes according to their chemical compositions. These classes are as follows:

1. Acid colors (classified according to their functions).
2. Basic colors.
3. Colors of the eosine group.
4. Direct colors.
5. Sulphur colors.
6. Pigment colors.

Each of these groups of colors will be considered individually and the important members of the group, as far as the paper industry is concerned will be described. The first group to be discussed in this way is the acid colors.

Acid Colors

As the name denotes the acid colors are those that are dyed to the fiber in an acid bath. The majority of the acid colors contain one or more sulphonic acid groups. The presence of these groups in the molecule not only affects the solubility and the covering power of the dyestuff, but these groups also influence the particular shade of the coloring matter in accordance with the position that they occupy in the molecular structure.

The acid colors are salts of organic and artificial coloring matters. The effect of the acid is to liberate the color principle, which is directly opposite to the case of the basic colors, wherein the coloring agent is set free by the action of alkali. Most of the acid colors found in the market to-day are sodium salts, with the exception of picric acid and in certain other cases potassium or calcium salts. When a strong acid, such as sulphuric acid, is added to the color bath, the most feeble acid color is the one that is most often set free. Acid colors have only a slight affinity for the cellulose fiber, if any at all and it is therefore necessary to fix them on the fiber by means of a strong size or mordant. But in spite of this the waste waters are often colored. When the quantity of sulphate of alumina is increased, the exhaustion of the color solution is augmented and the fixation of the color on the fiber is enhanced. Exception must be made for the case of Metanil Yellow N extra which requires the use of a sulphate of alumina which is free from acid, and a very slight excess of that salt. In certain cases the addition of barium chloride is of advantage. The use of this salt produces a lake on the cellulose fiber.

Advantages of the Use of These Coloring Matters

This group of coloring matters possesses the great advantage that they yield very regular shades that do not become mottled. Therefore they are preferably employed for producing very clear shades in which their high resistance to light makes them preferable to the basic coloring matters.

Certain acid coloring matters, such as, Orange N.R.O., Paper Scarlet N.R., Rocaeline N, when used in the proper manner, give back waters that are perfectly colorless or only slightly colored. Acid coloring matters may be used with all kinds of pulps, strongly sized pulps, pulps made from a bleached woodpulp base, for the manufacture of wrapping paper, ordinary cover paper and good grades of wall papers. These coloring matters are preferably and advantageously used in combination with basic dyestuffs. In making these composite color baths, the coloring matters should be dissolved in separate baths and then added separately to the beater, starting first with the acid color liquor. The two colors form lakes and the waste waters are almost colorless as a result.

Among the coloring matters that are most used in the paper industry, the following may be mentioned.

Metanil Yellow N Extra. This coloring matter has a very vivid golden yellow color and is employed either alone or in admixture with Acid Oranges or Auramine. It is sensitive to acids, to sulphate of alumina and above all to drying. When using this dyestuff it is recommended that the paper should not be dried too strongly in the anterior part of the dry portion of the papermaking machine.

Orange N. II. This color is among the most important that are employed in the dyeing of paper. This coloring matter is the fundamental color that is used in sampling wall papers and allows most accurate imitation of the faintest shades of chrome orange and ochre. When used in combination with Rhodamine and Eosine, it yields very brilliant scarlet shades. Carmine colors are obtained by combining it with Fuchsin and deep olives by combination with Brilliant Green N.B. This orange dye may be employed with all sorts of wood pulps.

Orange N.R.O. This coloring matter is recommended in particular for deep colors, for it yields a back water which is perfectly colorless. The color is a little more reddish than Orange N. II and it yields very deep scarlet shades in combination with eosines, rhodamines and safranine. In combination with Auramine it gives very fine orange shades. In combination with Naphthol Black N.B. it gives very fast browns which resist well the temperatures that are obtained in the drying process.

Paper Scarlet N.R. This coloring matter is particularly highly recommended for obtaining very bright scarlet shades on papers which are manufactured from a wood pulp and bleached cellulose base. It also yields back waters which are entirely free from color.

Brilliant Crocein n. 3 B. Cotton Scarlet N Extra. This coloring matter compares very well with the brilliant scarlets obtained with brilliant croceins. It is a little more yellowish and the efficiency of the dyeing operation is better. Thanks to the excellent resistance of the color to light and to the brightness of this coloring matter is much used in the paper industry. Quite an entire series of reds of perfect shade can be obtained, from the palest roses to the deepest reds.

Formyl Violet N.S. 4 B. This is an acid color which is particularly fast to alkalis and is recommended for use in bluing sized papers.

Wool Blue N. Black N. This coloring matter possesses excellent depth of color. It is especially recommended for blending in dyeing pulp used in the manufacture of color paper, and particularly in those cases where is is necessary for the color to stand up against lime. When this dyestuff is used alone, it gives sea blue shades, and combined with water soluble blues it gives a shade that corresponds well with prussian blue which is often used in the manufacture of papers made from chemical pulp. With Paper Scarlet and with Metanil Yellow it yields very deep and non-bronzy blacks.

Naphthol Black N.B. This coloring matter gives blacks with a violet tinge, and forms an excellent deep color for blue colored paper which it is desired to tone up in some way. When it is used in conjunction with Fuchsine and Methyl Violet, packing paper of a violet black color can be obtained. It is also used in combination with Basic Paper Black to give very intense and fast blacks which are insoluble in water. When used alone it is necessary to size the paper very strongly. When toned with Metanil Yellow N extra in conjunction with a strongly colored pulp, it gives very deep blacks which are fast to light.

The Basic Colors

The basic colors are salts of organic color bases. The majority of these coloring matters are derived from triphenylmethane. They are found in commerce principally as chlorohydrates, but also as acetates, as for example the acetate of rosaniline. It also comes

* Translated by Ismar Ginsberg from *Le Papier*.

in the form of oxalates, as in the case of certain malachite green marks, chlorozincates, as in certain marks of methylene blue and naphthol blue, and sulphates as for example Brilliant Green.

These colors that are soluble in water and come in the form of powders but sometimes in the form of crystals, as well, as in the case of Brilliant Green, Fuchsine, etc. The basic colors are distinguished from all others by their great covering power, by their purity and their brilliancy. They are very resistant to water and to washing, but their fastness to light, to chlorine, alkalies and acids is not perfect, with the exception of such colors as Safranine and Methylene Blue.

The affinity of the coloring matters of this series of woodpulp allows their use without the necessity of sizing. However when bleached pulp is employed, it is necessary to size the fiber. The rosin soap that is formed on the fibers acts as a mordant and fixes the color directly on the fiber. However in the case of paper that must be extremely resistant to water and to steaming as well, for example such papers as are used for making shells, etc., before sizing the pulp it is wise to fix the color with the aid of tannin, two parts of the tannin being employed for each part of the coloring matter that is employed.

The tannin mordant should be added at the moment when the coloring matter is absorbed by the paper pulp. If this is not done, then there is danger that only a surface coloring is obtained and the papers will not be fast to rubbing. In order to secure effective fixation of the coloring matter, it is necessary to allow the tannin to exert its action about thirty minutes before sizing is started.

Nature of Their Action

As has been indicated above the basic coloring matters are often combined with acid coloring matters, and when this is done, shades are obtained which are more resistant to water. The basic coloring matters can also be used in conjunction with mineral loading materials, such as kaolin, which have the power to fix the coloring matters and render them more resistant to the influence of light. It is advisable to use solutions of basic colors which are well dissolved and it is sometimes necessary to employ acetic acid to aid in the solution of the dyestuff, particularly when it is desired to obtain a dye liquor of rather high concentration. In order to avoid marbling effects in the paper it is advisable to employ dye solutions that are just as dilute as possible.

The basic dyestuffs are well suited for obtaining full-bodied colors on all sorts of paper pulps. They are particulary well suited for dyeing raw materials of rather low grade that are used in the manufacture of paper, such as mechanical wood pulp, unbleached pulp, kaolin and the like.

Among the various basic coloring matters that are employed in the dyeing of paper the following are of particular interest.

Auramine N.O. or N.O.O. This coloring matter gives very good results and yields a very brilliant and cheap yellow shade. It is particularly well adapted for dyeing cellulose and pulps that are not bleached. It adheres to the fiber with great avidity without the use of sizing materials. It must be mentioned that one condition influencing the character of the results obtained with this dyestuff is how the solution is made. It must be made in tepid water and not in boiling water. The temperature should be less than 70 degrees C. It is an excellent tone color which is strongly fixed on the sized pulp fiber and combines well with Metanile Yellow N extra and Orange N.R.O. Golden shades are obtained in this manner. Yellowish greenish shades are obtained in combination with Brilliant Green N.B.

Vesuvines. These are basic coloring matters which yield shades varying from orange yellow to deep brownish reds. They are usd in the place of mineral coloring matters when a great amount of the latter must be used, for when this is done, the papers become stiff and brittle. In order to dissolve these coloring matters it is necessary to use lukewarm water and not boiling water. The addition of kaolin and brown pigments facilitates the fixation of the coloring matter on the paper fiber and gives the color a high resistance to water, to light and to drying. The addition of copper sulphate or of sodium pichromate produces the same results.

Safraninie N.B. This is a red coloring matter of very vivid shade which is often used for toning the color of the paper.

Fuchsin N. A basic coloring matter which gives very good results, high exhaustion of the color bath and which is often used for toning the color of the paper.

Methyl Violet N. 4R and N. 2R. The first of these coloring matters yields shades which approach those obtained with fuchsin, but are possessed of a bluer tone. It fixes itself rapidly to the paper fiber and where there is difficulty of fixation, the addition of sulphate of alumina is sufficient to bring this about, the aluminum sulphate being added before the coloring takes place. In using these coloring matters with acid dyestuffs it is necessary to use the latter colors first. Deep red shades are obtained by mixing Orange N.R.O. and Methyl Violet N. 4R.

Methyl Violet N. Bluish Concentrated. This coloring matter is much used in the manufacture of colored papers. It gives deep bluish shades. It is employed either alone or in admixture with Malachite Green N.B. to obtain marine blues, blues imitating those obtained with prussian blue and those bluish shades which are frequently required in papers that are used for wrapping purposes, for posters, billboards and coverings. In order to shade the blues with a violet or green base it is customary to employ Metanil Yellow N extra, Orange N II and Orange N.R.O. Very interesting shades are obtained particularly with the latter coloring matter.

Victoria Blue N.B. This coloring matter yields very bright bluish shades, which are more brilliant than those that are obtained with soluble blues and the pure acid blues. It does not turn color when subjected to the action of artificial light but on the other hand it is very fugitive. It is necessary to add acetic acid to the solution of the coloring matter and to take care that the solutions of the dyestuff are very dilute, for its affinity to crude pulps and bleached cellulose as well is very great and it is accordingly very easy to obtain cloudy colorations on the paper. The addition of sulphate of alumin before dyeing will remove the possibility of cloudy colors.

Methylene Blue N.B. Very deep shades are obtained with this dyestuff which have a greenish appearance under artificial light. This dyestuff is particularly well suited for coloring bleached woodpulp, sized or not sized.

Methylene Blue N.R. etc. These coloring matters give shades which are commonly known as ultramarine blue. The methylene blues are particularly recommended for bluing of non bleached pulps such as are used in the manufacture of book paper, letter paper and the like.

Malachite Green N.B. Brilliant Green N.B. Brilliant Green N.J. Extra Crystals. These are very common coloring matters and are largely used in the manufacture of paper. They are recommended particularly in obtaining deep shades of green on crude pulps which may be sized or not. They combine with Methyl Violet N bluish, concentrated to give marine blues, with Metanil Yellow N extra and Orange N IV to give grass green shades. Very bright greens are obtained in combination with Auramine N.O.O.

Basic Paper Black N.J. This coloring matter gives ordinary grays in clear tones. When combined with Naphthol Black it yields blacks which are very fast to water. It is much employed in the coloring of papers which are used in packing switches as in this case it is necessary to use a paper which is very resistant to acids.

Quite a high concentration of coloring matter is required in dyeing with the black basic dyestuffs and combinations. It is advisable to fix the dyestuff on the paper fiber by the addition of a solution obtained by boiling sumac or tannin.

The Eosine Coloring Matters

This class of coloring matters is also known as the Resorcinol or Phthalein division, from the fact that the dyestuffs are derived from fluorescein, which is itself a product obtained by the condensation of resorcinol with the aid of phthalic acid. Fluorescein is found on the market in the form of its sodium salt, under the name of uramine. As it possesses only a slight coloring effect, it is not used to any extent in dyeing.

By reacting on fluorescein with bromine there is obtained a yellow dyestuff which is known as yellowish eosine, and by the action of iodine a bluish eosine is obtained. Other substitutions on the fluorescein molecule give various shades of Eosine, Erythrosine, the different marks of rhodamine and bengal rose.

The eosines possess a weak acid character, while the Rhodamines, on the contrary, are slightly basic, which makes them more resistant to the action of acids. They are also superior to the Eosines both in fastness to light and to washing. The solution of all these coloring matters has a characteristic fluorescence to a greater or lesser degree.

The Eosines are used as dyestuffs for coloring papers, particularly sized papers, for the production of pale rose shades of a particular vivacity. They may be employed where it is not essential that the color possess any great fastness to light. They are used by dissolving first in hot water and then adding the solution of the dye to the pulp, preferably before the sizing ingredients are added. Inasmuch as the shade of the eosines is slightly dulled by the action of sulphate of alumina, it is necessary to avoid any excess of this chemical, as far as is possible. The best results are obtained with the aid of acetate of alumina, in the place of sulphate of alumina. When the eosine dyestuff is precipitated directly on the pulp by the aid of basic acetate of lead, it was found that particularly brilliant colors could be obtained. In the first place the solution of the coloring matter was added to the paper pulp, and then the solution of basic acetate of lead. The quantity of the latter was twice that of the dyestuff. Finally rosin soap and acetate of alumina were added to the beater.

When the eosine coloring matters are fixed with the aid of salts of lead, there are obtained waste waters which are free from color, and furthermore the fastness of the eosine shades on the paper, which is but very slight as far as light influences are concerned, is materially increased in this manner. Furthermore the fastness of the eosine coloring matter to water is enhanced by combining them with basic colors such as Fuchsine.

Examples of Dyestuffs of the Series

Eosine N.D.A.—Erythrosine N.T.B. Very brilliant rose shades are obtained with the aid of these coloring matters on sized papers, and particularly on papers which are free from mechanical wood pulp. When pale rose shades are to be obtained, it is advisable to neutralize the action of the sulphate of alumina with a little borax. The roses and the reds that are obtained in this manner are fast to alkalies, sensitive to acids and slightly fast to water. In order to obtain vivid rose shades on papers that contain appreciable proportions of mechanical wood pulp, it is recommended that the Rhodamines be used in the place of the coloring matters of the eosine series.

Rhodamine N.B. and N. 6. J. These coloring matters are more brilliant than the eosines and are superior to them from the standpoint of fastness to light and the exhaustion of the color bath. The Rhodamines may be employed in combination with Methyl Violet N, concentrated bluish, in order to blue paper. In combination with Orange N.R.O. rhodamine gives beautiful scarlet shades.

The Direct Colors

These coloring matters are found in the market under different names, such as direct colors, diazol dyes, oxydiazols, paradiazols, diazamines, etc. The name of these coloring matters is derived from the fact that they will dye the fiber directly, that is to say without the need of using a mordant. This applies to animel as well as to vegetable fibers.

With the exception of a few special cases, the direct coloring matters are all azo-colors, and in general diazo, triazo and polyazo dyestuffs. The colors are made by coupling diazotized diamines, as for example dianisidine, tolidine, benzidine, paraphenylenediamine, toluylenediamine, naphthylenediamine and diamino stilbene and their derivatives and substitution products, with phenols, amines or derivatives of these substances.

Properties of the Colors

The direct colors are particularly soluble in water. A perfect solution is obtained by dissolving twenty-five to fifty times the weight of the dyestuff in water. It must be mentioned that water that contains the salts of calcium, that is either permanently or temporarily hard water cannot be used for this purpose. This water must first be softened by boiling with soda ash.

Vegetable fibers are generally dyed with these coloring matters by introducing them in the dye bath at a moderate temperature. The solution is then gradually brought up to the boiling point. Sodium chloride or sodium sulphate is generally added to the bath whether it is neutral, slightly acid or alkaline.

These dyestuffs adhere very well to vegetable fibers and it is possible to use mixtures of them in the dyeing operation. It is however necessary to remember in making these mixtures that dyestuffs which possess the same properties and which have the same action on the fiber should be chosen for this purpose. The direct colors are the ones that have the greatest affinity for the cellulose fiber. The residual dye liquors are completely exhausted. They are used preferably for coloring papers made from rag stock and from chemical pulp in the pulp state, particularly when it is desired to obtain papers which are colored fast to light, to alkalies and to washing.

How the Colors Are Used

These coloring matters are employed most particularly for the manufacture of blotting paper, letter copying paper, cigarette papers, parchment papers and the like. When the papers are subjected to a treatment with sulphate of copper, the colors dyed on them become more resistant to weather effects.

These colors are applicable likewise to the coloring of sized papers on which it is desirous of securing shades that are very fast to light, to alkalies, to acids and to rubbing. Thus certain wrapping and packing papers are dyed in this manner, as well as wall papers, letter papers, and fine cover papers. Mechanical wood pulp does not absorb these coloring matters so well as rag and chemical wood. In fact it is necessary first to treat the paper with acid colors, or better still with basic dyes. Then the direct colors are fixed quite rapidly on the fiber, and the shade becomes more intense and more regular. It is recommended that the pulp first be heated to a temperature of 60 degrees C and to add from five to ten per cent of sodium chloride as to secure more effective exhaustion of the color bath. Sulphate of sodium may also be employed for this purpose. In the case of papers that must be sized the same general method of procedure is used as described above under the acid colors.

In general the prices of the direct coloring matters are somewhat higher than those of the acid or basic colors. The shades obtained with the direct colors are not as brilliant, but, as has been mentioned above, the great advantage that is gained with these dyestuff is their great affinity for the paper fiber, the complete exhaustion of the color baths and the great resistance to light, alkalies and acids.

Some Direct Colors Used in Papermaking

Among the direct coloring matters that are employed in the paper making process the following may be mentioned as most typical and most important.

FAST DIAZOL YELLOW. N. A.—This yellow dyestuff is fast to light, to alkalies and to acids. It gives an excellent tint, particularly when it is employed on sized papers which are free from mechanical wood pulp. It may also be employed with good results on non-sized papers. This coloring matter corresponds to Stilbene Yellow and Direct Yellow R.

PAPER YELLOW.—This is a yellow which has a slightly more reddish tinge than the one above. It possesses the same tinctorial properties as the dyestuffs described above. It is very fast to water and exhausts well.

DIAZOL ORANGE.—This is a coloring matter that fixes itself very well on rag pulp. It is excellent for producing color tints, because of its great fastness to light. It is used alone or in admixture with Fast Diazol Yellow.

CONGO RED.—This is the first direct color that was discovered, it being first made by Mottiger in 1884. It is a color that is much used in papermaking, for it yields cheap brilliant scarlets. This shade is very attractive but the use of the dyestuff must be carried out under certain precautions, as it is very sensitive to acids. Thus when sized pulps are to be colored with congo red, it is advisable to add from three to four kilograms of carbonate of soda to one hundred kilograms of the dry pulp. The colored papers also dull when they are exposed to an acid atmosphere.

PURE DIAZOL BLUE.—This is a coloring matter that is particularly well suited for dyeing papers that are not sized and also in the manufacture of cloudy paper. The color is absolutely fast to water and comparatively fast to light. It is also employed at times for obtaining clear, fast blues on sized pulps for making fancy correspondence paper. In this case it is recommended that the dyestuff be fixed on the fiber with the aid of copper sulphate, but under such conditions a slightly greenish cast is given to the paper. In combination with fast diazol yellow it is possible to obtain greens that are resistant to light and that are employed in the manufacture of wall paper.

OXYDIAZOL BLACK.—This is a particularly interesting color for with its aid it is possible to obtain grays and blacks which are fast to water on rag pulp which is free from chemical wood. It is very well suited for producing cloudy effects in paper. On crude cellulose it yields fast blacks which will not rub off. The addition of acetate of lime renders these blacks even more fast. When this coloring matter is used along with basic colors, it is advisable to add the substance to the color bath in the following order: first the Oxydiazol Black dyestuff, then the acetate of lime, then the basic coloring matter and finally the size.

Sulphur Colors or Sulphanols

The sulphur coloring matters are obtained by the fusion of nitrated amines, nitrated phenols, aminophenols, derivatives of diphenylamine, paraphenols, indo-phenols and other analagous substances, with sulphide of sodium or polysulphides. These substances are either fused together at high temperatures or boiled together. The coloring matters are generally in the form of powders which are insoluble in water. They are bought and sold in the form of pastes. The sulphur coloring matters may be considered either as direct or substantive dyestuffs, because they are fixed directly, that is without the aid of a mordant, direct on the vegetable fiber. This is attributed to their large molecule, which also explains their colloidal nature.

As these coloring matters are generally insoluble in water, sulphide of sodium is employed to dissolve them, but this chemical attacks copper and alloys of this metal very readily. Hence in dissolving the dyestuffs in this substance wooden vats must be employed or vats made from iron, lead, nickel, etc.

The use of the sulphur coloring matters in the manufacture of paper entails serious difficulties, for it is absolutely necessary to remove all the sodium sulphide in excess in order to avoid this chemical attacking the copper and bronze parts of the paper making machinery. Hence when such colors are employed, the process should be carried out in a beater whose parts, the beater roll, the bed plate and the beater roll knives, are not made of bronze.

The quantity of sulphide of soda that is employed in dissolving these coloring matters varies very considerably. It depends to a large extent on the concentration of the dye liquor. The greater the concentration of the dye bath, the greater the amount of sodium sulphide required for solution. On the average twice the weight of sulphide of soda as of the dyestuff, in the case of the black sulphur colors, must be employed.

The coloring matters of this series as well as sodium sulphide must be kept in a dry place and at a temperature which is not too high, for they are susceptible to oxidation which spoils them.

Pigment Colors

The pigment colors are of a very diversified nature. In the coloring of paper these coloring matters are properly used only for fine grades of paper, which are strongly sized and which have to possess a high resistance to the action of light. These dyestuffs are merely dissolved in water and added to the pulp beater after first being sifted. At times the pigment is formed in the body of the pulp itself. For this purpose paranitraniline, alpha naphthylamine in diazotized condition is made to act on beta naphthol. It has been mentioned that several of the coloring matters that belong to the indanthrene series are used in pigment colors, particularly for bluing of high grade pulps made from rag stock and bleached chemical wood.

The Paper Fibers and Their Affinity Towards Coloring Matters

The paper pulp that is manufactured from cotton rags, whether these are new or old rags, has no affinity for the acid coloring matters. Such a rag pulp has a slight affinity for the basic dyestuffs and on the other hand a very strong affinity for the direct colors and the sulphur dyes. This kind of pulp which is generally employed in the manufacture of high grades of writing papers is customarily not subjected to any deep coloring. As a rule it is given a bluish tint or some other light shade.

The linen, hemp and jute fibers, which are obtained as raw paper stock in the form of waste sacs, cloths, etc., and which are esteemed for their length, making therefore a very strong paper, possess a great affinity for the basic coloring matters. These paper materials must be sized first when they are to be dyed with acid colors. A very high degree of fastness is obtained by carrying out the dyeing operation with a mixture of basic and acid coloring matters, adding the color solutions separately, one after the other. These fibers have a great affinity for the direct colors, as much as the cellulose fibers, and jute which has been dyed with direct coloring matters may be easily given a cloudy appearance by the usual treatment.

On the other hand mechanical woodpulp posseses a great affinity for the basic dyestuffs, which fix themselves to the fiber with great rapidity. Attention must be paid to this matter for the great affinity of the coloring matters for the mechanical woodpulp fibers must be controlled in order that a firm union of paper fiber and coloring matter takes place. The use of the acid colors is preferable from this point of view and when they are used, the paper must be strongly sized.

As far as straw pulp is concerned, the affinity is the same as that of jute. The crude chemical woodpulp possesses the power of fixing the basic colors in a satisfactory manner, and furthermore the acid colors may also be used with good results and are generally added to the pulp before it is sized.

Then again bleached chemical woodpulps possess a certain affinity for the basic coloring matters, but they must be sized or mordanted in order to obtain a firm union between fiber and color. On the other hand the affinity of the bleached chemical pulps for direct coloring matters is very great.

Sizing and Mordants

In general the materials that are employed in the sizing of paper have a great influence on the color of the finished product. Thus for example the acid coloring matters fix themselves well to rosin soap, while on the other hand sulphate of alumina in precipitating the rosin, carries along the coloring matter with it. This happens particularly when it is acid so that a lake is formed which is then fixed on the paper fibers. Very often the addition of chloride of barium or acetate of lime will serve to enhance the fixation of the acid coloring matters.

The hydrotimetric degree of water must always be considered in fixing the dyestuff and in the sizing process. Certain tinting blues do not exert their action in the presence of water that contains lime salts and require a slight excess of sulphate of alumina. Sulphate of copper is employed for increasing the fastness of certain coloring matters to light, particularly the substantive coloring matters. Tannins or tannic acid are excellent mordants for they possess great affinity for the vegetable fibers. These mordants are employed most generally with the dyestuffs of the basic series Green earth is a clayey substance which owes its color to the presence of an oxide of iron. It possesses the property of rendering the basic coloring matters fast to lime.

Sulphate of soda is employed either in powder or in crystalline form. When it is used in the calcined condition (that is in powder form), with coloring matters that are sensitive to acids, care must be taken in using it for it may contain an excess of sulphuric acid.

Special Forms of Colored Papers

In addition to the regular run of colored papers there are a few specialties which it would be well to describe here.

In the first place there is a group of papers which are known as clouded papers, or papers with the chine effect. Such paper is obtained by incorporating with the mass of pulp in the beater (bleached pulp or slightly tinted pulp), a certain percentage of a colored pulp, which has been dyed with coloring matters that are fast to water.

In general the greater number of manufacturers who make this paper of a high quality use cotton rags of a deep color which are mixed with the rest of the paper stock in certain definite proportions. They also employ cotton pulp which is dyed after being beaten and then incorporated with the rest of the stock in the beater, the mixing being made with the beater roll raised.

The direct coloring matters are employed for this manufacturing process, for they fix themselves perfectly to the cotton fibers as well as on the chemical wood fibers. Then again they are very fast to water.

When it is desired to obtain a more strongly marked cloudy effect in the paper it is advisable to employ jute fibers, ramie fibers or hemp fibers which are very long and accentuate the cloudiness of the paper.

Marbled Papers

As far as the manufacture of marbled papers is concerned, it may be said that the coloring process is the same as that carried out in the ordinary manner, but only a portion of the paper is colored in place of its entirety. However in the place of mixing the coloring matter directly in the beater, it is applied with the aid of a spraying device, the coloring taking place right on the paper making machine.

Then again in order to obtain a different effect it is possible to apply solutions of colors with a spray on to the finished paper sheet in place of distributing over the latter a layer of color pulp. It is also possible to make the wet sheet of paper come in contact with cloths or felts which are allowed to pass through solution of the coloring matter. When this process is carried out, it is found that the surface of the paper will be colored in a very novel manner.

Coloring by Dipping the Paper

Another way in which coloring matter may be applied to paper is to make the paper web pass through the color bath. This process is well suited in general for the manufacture of colored silk papers, papers for flower making and for making crepe. When these papers are dyed in the regular manner in the beater, a great proportion of the coloring matter goes to waste for the bath is not exhausted and the residual waters obtained contain much color.

For this purpose it is necessary to employ very fast coloring matters, which are perfectly soluble in water. The acid colors are particularly used for this purpose for they are very fast to light. It is however possible to employ the basic coloring matters when it is desired to obtain very deep shades. The color solution is made with the aid of water or of alcohol in case of the basic colors. When alcohol is employed the drying operation is considerably accelerated. Wall paper may be dyed in this manner.

Coloring Paper by Brushing

The color is applied in this process with the aid of a special device which is known as a brush roller. This apparatus brushes both sides of the paper with the color solution. Very bright and vivid shades are obtained in this manner.

Box Board Men to Meet at Commodore

WASHINGTON, D. C., July 14, 1925.—Efforts of the box board and allied industries to develop a program for the reduction of excessive variations in the thickness of container materials have been carried to a point where the Division of Simplified Practice, Department of Commerce, has been asked to call a general conference to act on specific recommendations. It was announced today that this conference will be held on Wednesday, July 29, in the Commodore Hotel, New York City, W. A. Gately, of the Division of Simplified Practice, presiding.

The meeting will bring together representatives of shipper associations handling clothing, foods, drugs, hardware, glass, furniture, toys, and a wide range of other commodities, as representing the consuming group for the use of set-up boxes, folding boxes, and other containers made of box board. The Simplification Committee, which is headed by George W. Gair, of the Robert Gair Company, has representation from the National Containers Association, the Box Board Association, Folding Box Manufacturers National Association, and National Paper Box Manufacturers Association. This committee has been at work since early last year.

The program as developed would provide for six colors for folding boxes: gray, green, yellow, blue, buff and red. It would standardize set-up boxes in the following colors: white, blue, brown, green tan and red.

The proposed reduction in thicknesses to be offered by the Simplification Committee would be as follows:

Non-bending boards from 85 to 16.

Bending boards, including single manilas, test jute, solid news and solid wood pulp board from 80 to 16.

Pasted chip board from 25 to 9.

Container board from 14 to 4.

Folding box board from 20 to 10.

Solid manilas from 20 to 5.

A number of associations have already gone on record in favor of the simplification plan, recognizing that the existing variations in thickness do not affect strength, durability or appearance, while they do add to the expense of manufacturer and distributor.

The Simplification Committee points out that these eliminations will mean longer runs for the mills, and will reduce overhead costs, warehousing space, labor, stock investments, and other expenses. The reduction of these wastes, it is declared, will permit better service to the container manufacturers and the user of the containers.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Machinery

Multi-Cylinder Paper Machine. F. A. Headson. U. S. pat. 1,492,563, May 6, 1924. After leaving the last couch roll, and before being sent to the ordinary presses, the sheet is passed between a series of auxiliary presses, each consisting of an upper, rubber-covered roll and a lower screen-covered roll built strong enough to stand the required pressure. A trough is provided below each screen-covered roll to catch any water passing through. When passing through the auxiliary presses, the sheet is carried between the couch felt and an upper felt.—A. P.-C.

Paper Machine Drive. F. Warburton. Eng. pat. 219,397. In order to control relative speeds of motors driving paper machine sections, a synchronous motor is provided for each motor to be controlled; synchronous speeds are electrically transmitted to the synchronous motors. Each motor has a regulator and part of each regulator is driven by the common speed member and part by the synchronous motor. The automatic regulator and the synchronous motor are mechanically dissociated from each motor to be controlled. —A. P.-C.

Device for Reeling Paper After Calendering. Wm. Sheahan. U. S. pat. 1,493,456, May 6, 1924. The winder bar is pressed horizontally against the bottom roll of the calender and driven by frictional contact with this roll, provision being made for maintaining the pressure constant as the paper is being wound and the winder bar is being gradually forced away from the calender roll by the thickness of paper wound. When the roll of paper is large enough, it is drawn away from the calender roll together with the journal boxes, but provision is made for rotating it until other journal boxes with a new winder bar have been placed in position in contact with the calender. The sheet is then broken and the second reel begun.—A. P.-C.

Machine for Cutting and Coiling Crepe Paper. F. P. Hildebrandt. U. S. pat. 1,484,498, Feb. 19, 1924. The invention relates to an apparatus for severing sections of crepe paper from a large roll and coiling these sections into small rolls. The paper is unwound from the large roll by making the latter rest on a rotating roll, and passes over a series of rolls, the last of which is circumferentially grooved with fingers in the grooves to lift off the paper and direct it on to a resilient doctor. Below the doctor is a fixed bed knife, co-acting with a rotary fly knife to periodically cut the web. The doctor draws the edge of the web away from the bed knife after the cut, to prevent jamming up of the web by reason of adherence brought about through the cutting operation. The severed portion of the web is then made into a coreless web by passing it over a series of interposed rollers, which carry it in a curved path, without putting it under any tension. End plates are provided which are constantly brought together and spread apart to jog the roll into shape and make the ends smooth. Means are also provided for discharging the finished roll by raising some of the carrying rollers.—A. P.-C.

Method of and Apparatus for Severing Sheets from a Web. C. P. Winter. U. S. pat. 1,477,021, Dec. 11, 1923. Two sheets of paper are passed together between a pair of "scoring rollers," which moisten both webs at intervals along certain lines, thereby weakening them along these lines. The webs are then severed by suitable means, e. g., by passing them through two pairs of rolls, the second of which has a higher velocity than the first. The "scorings" on the two webs are in staggered relation to one another, and the severing mechanism is placed near enough to the scoring rollers that the line of moisture on one sheet has not time to penetrate through to the other sheet. Also, the speeds of the two pair of rollers of the severing mechanism are such that after severance of the webs into sheets, the sheets are not entirely displaced from their superimposed position one with the other, thus retaining a certain continuity, in which relation they are delivered to a folding machine.—A. P.-C.

Slitting and Rewinding Machine. E. J. O'Clair assignor to Nashua Gummed & Coated Paper Co. U. S. pat. 1,484,843, Feb. 26, 1924. The object of the invention is to increase the effective speed of operation of this type of machine by means of mechanisms which reduce the time required for removing completed rolls and starting new ones. A table is provided just back of the winding shaft, on which can be rolled the finished reels. The riding or pressure roller is mounted in such a manner that it can be raised by air pressure by operating a lever in front of the machine, and when it is lowered to start a new set of rolls the air pressure cushions its fall. Brackets are provided for convenience in placing a spare arbor, and for placing the crimping bar.—A. P.-C.

Machine for Cutting Corrugated Board. E. E. Maston assignor to Mid-West Box Co. U. S. pat. 1,493,763, May 13, 1924. This is very similar to B. Heinrich's U. S. pat. 1,482,894 of Feb. 5, 1924. The knife operates intermittently and is mounted on a reciprocating carriage, which has a yieldable connection so that the web and carriage can be operated at slightly different speeds, without causing the web to buckle. The knife is operated by the edge of the web coming up against an abutment or lever which closes an electro-magnetic circuit and releases the clutch controlling the knife and carriage. The length of sheet cut can be varied by adjusting the position of the lever. The portion of the web projecting beyond the cutter roll is supported at one side only by a rail, the other side being unsupported, so that after the sheet has been severed it falls by gravity on an inclined support where it is stacked.—A. P.-C.

Machine for Cutting Corrugated Board. B. Heinrichs assignor to Mid-West Box Co. U. S. pat. 1,482,894, Feb. 5, 1924. According to the invention, the fly knife operates intermittently. When the forward edge of the web comes up against an abutment, the latter releases a clutch which causes the knife to make one complete revolution. The cutter is mounted on a reciprocating carriage, which has a travel synchronizing with the revolution of the knife, and which is operated by a yielding connection, so that the web and carriage can be operated at slightly different speeds without causing the web to buckle. The length of sheet cut can be varied by suitably adjusting the position of the abutment. The severed sheets are delivered on to a device for automatically stacking them.—A. P.-C.

Protective Device for Paper Rolls and Cores. Geo. Piper. U. S. pat. 1,491,063, Apr. 22, 1924. Each end of the roll is covered with a cap. Between the end of the roll and the cap is preferably placed a metal plate with a flange extending a short distance down the side of the roll. The cap, which also extends a short distance down the side of the roll, is made of canvas, duck, etc., and is provided with a leather rim, with a reinforcing leather band along the circumference of the edge of the roll, and with another circular reinforcing leather band of somewhat smaller diameter than the first one. The leather rim has eyelets, to allow the two caps, when in position on the roll, to be stitched together and hold them securely in place. When returning the cores a number of them are bundled together and caps are placed at each end of the bundle, the smaller

reinforcing band fitting along the edge of the bundle.—A. P.-C.

Truck for Handling Rolls of Paper. Thos. Johancen and E. Kehoe. U. S. pat. 1,486,489, March 11, 1924. The truck frame sustains a tilting frame or table consisting of two side bars of angle iron shape which are rigidly connected by a series of cross bars. It is pivoted to the truck frame at a point some distance back of the vertical plane through the front wheel axis. A rod and piston pivoted to the tilting frame fit inside a cylinder connected to a bar attached to brackets depending from the truck wheel axle. The cylinder is filled with a suitable fluid, and is provided with an exterior pipe by means of which the fluid can pass from one side of the piston to the other. The pipe has an adjustable valve to regulate the rate at which the fluid passes through it. On tilting up the table, the movement is rapid at first, until the bar to which the cylinder is connected strikes the floor. The further downward motion is checked by the fluid, and takes place only at such rate as is permitted by the passage of the fluid, through the valve in the outer pipe, so that the roll is at all times under complete control. The return motion can be effected much more rapidly, because the piston head is provided with openings which are covered with a flexible disk washer, which opens when the tilting frame is raised, but is kept pressed against the openings on the downward movement.—A. P.-C.

Motors and Control in Paper Mills. W. W. Spratt. *Paper Ind.* 6, 1404-1409 (Nov. 1924). A discussion of the types of motors best suited for driving the various classes of machinery in the paper mill, and of the control best suited for each type of motor.—A. P.-C.

Hints to Pulp and Paper Mill Executives on Electrical Applications. A. D. Ross. *Pulp & Paper* 22, 1133-1136 (Nov. 6, 1924). A discussion of the selection, control and care of electrical equipment in pulp and paper mills.—A. P.-C.

Cellulose and Lignin

Chemical Products of Cellulose. *Ind. Eng. Chem.* 17, 33 (Jan. 1925). A compilation, prepared by the Division of Cellulose Chemistry of the American Chemical Society, of the chemical products derived from cellulose.—A. P.-C.

Constitution of Cellulose. A. W. Schorger. *Ind. Eng. Chem.* 16, 1274-1275 (Dec. 1924). The author suggests a formula for the $(C_6H_{10}O_5)_4$ unit shown up by Roentgen ray spectographs, and shows how it fits in with known facts.—A. P.-C.

Chemistry of Cellulose. Anon. *Zellstoff U. Paper* 4, 266-267 (Oct. 1924). Abstracts of the papers given by Herzog on the "Fine Structure of Fibrous Substances," by Vieweg on "The Absorption of Alkali by Cellulose from Alcoholic and Aqueous Solutions of Sodium Hydroxide," and by Heuser on "Alkali Cellulose" at the Innsbruck colloid convention, Sept. 1924.—J. L. P.

Formation of Hydrocellulose. H. Gault and B. C. Mukerji. *Compt. Rend.* 179, 402-405 (1924). Dilute sulphuric acid up to 5% has no action on cellulose at ordinary temperature, even after four months, unless the treated cellulose is dried; upon drying, degradation of the cellulose takes place in proportion to the concentration of the acid. Immersion of cellulose in acid in concentrations up to 50% at 65° to 90° C., followed by washing and drying, causes degradation which varies with the concentration of the acid and the time of immersion.—A. P.-C.

Action of Strong Organic and Inorganic Bases on Cotton Cellulose. Part I. Fr. Dehnert and W. König. *Cellulosechemie* 5, 107-112 (Dec. 21, 1924). Mercerization tests, following the procedure of Vieweg, demonstrated the presence of a chemical compound, $(C_6H_{10}O_5)_2$. 1NaOH, as a result of the action of 4-6 normal sodium hydroxide solution on cotton cellulose. This result is in in agreement with former investigators. With increasing concentrations of alkali the amount of sodium hydroxide absorbed by the cotton increases also. With 10-12 normal sodium hydroxide solutions the absorption is constant corresponding to the compound $(C_6H_{10}O_5)_2$. 2NaOH. Compounds of potassium and lithium, analogous to the former sodium hydroxide-cellulose compound, were shown to exist by means of curves. The explanation of the results is in agreement with Heuser (*Chem Ztg.* 48, 742, 1924).—J. L. P.

Yield of Beta-Glucosan from the Low Pressure Distillation of Cellulose. H. J. P. Venn. *J. Text. Inst.* 15, 414-418T (Aug.); *Cellulosechemie* 5, 95-98 (Dec. 7, 1924). The yield of beta-glucosan during the distillation of cotton depends on the purity of the cotton. The yield is increased to 28% by removing the water-soluble constituents of the cotton; treatment with sodium hydroxide and then with hydrochloric acid increases the yield to 33%. Further purification has little effect, and the waxes and fats present have little influence on the yield. Boiling with sodium hydroxide depresses the yield of beta-glucosan from Egyptian cotton but has no effect on American cotton. The acidity of the aqueous portion is always the lowest when the yield of beta-glucosan is the highest. The maximum yield from cotton was 37%, from hydrocellulose 40%, and from wheat starch 26%.—J. L. P.

How Shall We Define Cellulose? Peter Klason. *Svensk Pappers-Tid.* July 15, 1924; *Paper* 35, 17-20 (Oct. 23, 1924). See *Paper Trade J.* 80, No. 4, 51 (Jan. 22, 1925).—A. P.-C.

Results of Recent Researches on Cellulose. K. Hess. *Z. Angew. Chem.* 37, 993-1003 (1924). By the optical rotation of solutions of cellulose in cuprammonium and the reactions of the ions in solutions of varying composition, according to the laws of mass action, it was proved that cellulose reacts as a chemical unit, $C_6H_{10}O_5$, rather than $C_{12}H_{20}O_{10}$. The production of cellobiose from cellulose may therefore be a secondary reversion phenomenon. All cellulose in cuprammonium solution, even these hitherto regarded as highly modified, are practically equivalent in optical activity and mass action relationships, when calculated as free from small quantities of impurities. A standard solution of purified cotton containing 4 $C_6H_{10}O_5$ and 10 Cu in 100 liters has a rotation of —3.36° at 23°. Wood cellulose generally shows slightly lower values but can be purified so as to give the same value as cotton; in viscose silk this purification is effected with partial elimination of some of the non-cellulose constituents. Cellulose regenerated from cuprammonium solutions and even the cellulose obtained by saponification of various cellulose acetates are substantially equivalent to cotton cellulose. The variable solubilities of cellulose triacetate in its different forms are attributed to the influence of small quantities of impurities. Even when the regenerated cellulose differ in their solubility in 8% sodium hydroxide they react in cuprammonium with the same simple structural unit, although the wide differences in dispersion capacity may be preserved. The cellulose triacetates which are soluble in chloroform or tetrachloroethane show a rotary power approximately —20° in these solvents and —50° in pyridine; they can be produced in the form of large crystals from solutions in tetrachloroethane or in ethylene tetrachloride. Presumably these cellulose acetates form molecular combinations with these solvents. The lower cellulose acetates, soluble in acetone, have an activity of only about —21° in pyridine, but the cellulose regenerated from them have rotations in cuprammonium similar to other forms of cellulose. Previous ideas of polymerization and depolymerizatin of the cellulose molecule are untenable; all celluloses have the same simple molecule, regardless of their degree of dispersion. An analogous instance of simple molecular reaction in a heterogenous system is found in the case of zeolites. By the same method the molecular structural identity of "cellulose A" with normal cellulose is indicated. Hydrocellulose is also proved to be a mixture of structurally intact cellulose or "cellulose A" with a minor quantity of a highly cupric-reducing non-cellulose impurity. The cellulose component can be separated from a solution of hydrocellulose, prepared by the method of Knoevenagel and Busch in 8% sodium hydroxide by precipitation with ammonia. This component is identical with "cellulose A" in dispersibility (solubility) and copper value (about 2). If the preparation of the hydrocellulose be very carefully conducted, at —5° to —10°, the product practically identical with

"cellulose A" can be obtained directly. All forms of cellulose yield the same trimethylcellulose when completely methylated. Lichenin is different from cellulose or hydrocellulose.—C. J. W.

Absorption of Sodium Hydroxide from Solutions by Cellulose. W. Vieweg. *Z. Angew. Chem.* 37, 1008-1010 (1924). No sign of formation of a chemical combination is shown in the case of aqueous-alcoholic solutions of sodium hydroxide; the absorption curves are straight lines, indicating a uniform partition of the alkali between the cellulose and the liquid, but inclining more to the cellulose the stronger the alcohol. In aqueous sodium hydroxide there is a constant value between 16 and 35g. per 100 cc. concentration of sodium hydroxide, indicating a chemical combination with 12.8 to 13% sodium hydroxide, corresponding to the molecular ratio $(C_6H_{10}O_5)_2$. NaOH. With concentrations above 40 g. per 100 cc. there are indications of another combination in the ratio $C_6H_{10}O_5$. NaOH. Conclusions to the contrary are based on experimental errors, the principal source of error being failure to press out the solution retained in the mass of cellulose, which liquid has quite a different composition from that of the bulk. Other errors are introduced by performing the experiments in glass vessels, by the inaccurate delivery from pipettes when dealing with highly concentrated solutions and by the influence of dissolved cellulose on the titration.—C. J. W.

Alkali Cellulose. E. Heuser. *Z. Angew. Chem.* 37, 1010-1013. Modifying his previous views, Heuser confirms the conclusions of Vieweg (see preceding abstract) that, eliminating analytical errors, the absorption of sodium hydroxide from solutions of 16 to 24% concentration corresponds to the formation of a compound $(C_6H_{10}O_5)_2$. NaOH. At higher concentrations, evidence was obtained of the adsorption of sodium hydroxide by the compound alkali-cellulose; absorption was reduced by working at higher temperatures. Similar determinations performed with other alkali metals showed that flat portions of the absorption curves indicative of chemical combination were obtained. LiOH, NaOH, KOH combine in the molecular ratio $(C_6H_{10}O_5)_2$. MOH, while with CasOH the complex appears to be $(C_6H_{10}O_5)_3$. CsOH.—C. J. W.

Determination of the Copper Value of Cellulose. E. Benesch. *Chem. Ztg.* 48, 861 (1924). Three to four grams of cellulose are placed in an Erlenmeyer flask of about 1 l. capacity, 25 cc. each of copper sulphate and alkaline tartrate solutions are added and washed down with 50 cc. of water. The flask is covered with a small glass crystallizing dish and the contents are boiled for 15 min. The material is collected in a small Büchner funnel on a double quantitative filter paper. It is sucked dry and washed until free from copper solution, then transferred to a large beaker, the filter paper being placed with the red side uppermost, the funnel is rinsed with 100 cc. of water and 25 cc. of a solution of 10 g. of ferric ammonium sulphate in 100 cc. of 10% sulphuric acid are added. The progress of the oxidation is observed by the change of color of the filter paper and when this is completely discharged (about 30 min.), the whole is again filtered through the same funnel, washed by decantation about 6 or 7 times with 50 cc. of water each time until free from iron and the filtrate, heated above 50°, with the addition of a small quantity of sulphuric acid, is titrated with permanganate. The result is corrected by deducting the permanganate value of 25 cc. of the ferric ammonium sulphate solution titrated under the same conditions.—C. J. W.

Determination of the Reducing Power of Cellulose Products. K. Hess. W. Weltzien and K. Nakamura. *Annalen Der Chemie* 440, 290-304 (1924). The sensitiveness of alkali soluble celluloses to the action of hot alkali renders the copper numbers, as determeined by Schwalbe's method, useless for purposes of comparison with corresponding data obtained from celluloses insoluble in alkali. Attack on the cellulose molecule during the determiniation is prevented by precipitating the cellulose from its solution in alkali, as th insoluble copper compound by the addition of cold Fehling's solution, prior to completing the reduction of the copper at the boiling point. Consistent results are obtained if concentrations of reagents and duration and temperature of reation are made the same in all cases, the recommended procedure being as follows: Rochelle salt (124.12 g.) is dissolved in the least possible quantity of warm water and a solution of copper sulphate (24.97 g.) in 130 cc. water added. Twelfth normal sodium hydroxide (125 cc.) is then added and the whole made up to 500 cc. The cellulose (0.4 g.) is dissolved as rapidly as possible, rise in temperature being avoided, in third normal sodium hydroxide (10 cc.) contained in a round bottomed flask fitted with a stirrer and thermometer. Ten cc. of the above copper solution and 5 cc. of the 12 *N* sodium hydroxide are mixed and diluted to 55 cc., the whole being then added to the cellulose solution and the mixture, containing the gelatinous copper-cellulose precipitate, stirred cold for 15 min. The flask is then placed in a glycerol bath, previously heated to 150°, and the mixture maintained at the boiling point (104° C.) for 5 min. It is then cooled and centrifuged with water, and if necessary, alkaline Rochelle salt solution, everything dissolving except the cuprous oxide, which is afterwards dissolved in dilute sulphuric acid and determined electrolytically.—C. J. W.

Miscellaneous

Teaching Micrography at the French School of Paper Making at Grenoble. L. Vidal *Paper Trade J.* 79, No. 21, 49-50 (Nov. 20, 1924). An outline of the course.—A. P.-C.

French School of Paper Making at the End of 1922. L. Barbillion. *Paper Trade J.* 79, No. 20, 49-50 (Nov. 13, 1924). A description of the organizing of the school, of its equipment and of the scope of its work.—A. P.-C.

Testing Section of the Government Printing Office. *Paper Trade J.* 79, No. 18, 45-46 (Oct. 30, 1924). Outline of the scope of the Testing Section with a description of the physical testing room which is maintained at a temperature of 70° to 75° F. and at a relative humidity of 50%.—A. P.-C.

The Why and Wherefore of Our Course in Pulp and Paper Making. H. E. Weston. *Paper Trade J.* 79, No. 19, 54, 56 (Oct. 30, 1924); *Paper* 35, 101-102 (Nov. 6, 1924). Brief outline of the reasons for organizing a pulp and papermaking course at the New York State College of Forestry, with an outline of the facilities.—A. P.-C.

Use of Ultra-Violet Light in Deciphering Damaged Documents. Fonzes-Diacon, Faucon and Reynaud. *Paper Trade J.* 78, No. 14, 78 (Apr. 3, 1924). See *Pulp & Paper* 22, 1067 (Oct. 16, 1924); *Paper Trade J.* 79, No. 13, 51 (Sept. 25, 1924).—A. P.-C.

The Machine Tender. *Paper Ind.* 6, 1386-1387 (Nov. 1924). A consideration of his value and duties in a paper mill, bringing out the differences in the qualifications required of the machine tender in the manufacture of different grades of papers (news, book, fine, etc.).—A. P.-C.

Why Does Paper Curl? Henry Bert. *Paper Mill* 48, No. 45, 24, 26 (Nov. 8, 1924). A discussion of uneven expansion and contraction on the opposite sides of the sheet in the manufacture of board on cylinder machines, and of how to overcome curling by counteracting uneven contraction by uneven expansion.—A. P.-C.

Paints Resistant to Sulphite Fumes. P. H. Walker and E. F. Hickson. *Ind. Eng. Chem.* 16, 1142-1143 (Nov. 1924). As a result of tests on a large number of different paints the use of a titanium-zinc oxide paint, free from lead, is recommended for exterior painting around places subjected to sulphide fumes. A fume-resisting paint of this kind might be composed of 60% titanium pigment (25% titanium dioxide and 75% barium sulphate) and 40% zinc oxide as the pigments, and about 85% of linseed oil and 15% of drier and volatile matter as the vehicle. Lead drier should not be used, but cobalt is recommended. Such a paint should contain between 60 and 65% of pigment. For exterior tinted paints, up to 10% of the pigment may be allowed for tinting colors; and these colors should be free from lead.—A. P.-C.

Pulp and Paper Making in the South

By John D. Rue of U. S. Forest Products Laboratory in "Southern Lumberman"

There appears to be a well-established and widespread feeling that the South is destined to become an important factor in the development of the pulp and paper industry. Already the South can boast a growing sulphate pulp, kraft paper and board industry. Beginnings have been made in the manufacture of book paper from Southern woods, and of several more specialized products such as Celotex, cotton linter and hull fiber pulps, and pulp from Florida saw grass.

In order that we may view in its true perspective the position which the South holds in the industry and the place it may be destined to fill in future, it will be worth while to begin with a brief review of the history of pulp and paper making in the United States at large.

Early Stages of Paper Making in the United States

In the early days of paper making the essential raw material was rag, and cleaning and reduction operations constituted an integral part of the paper-making process. Pulp mills as separate and distinct manufacturing units did not come into existence until wood became a recognized raw material.

The first paper mill in America was erected near Philadelphia in 1690 by one Walter Rittenhouse. The product went chiefly into printing. At first there were few books, however, and the demand was limited. Newspaper demand did not exist until after 1700. With the gradual growth of printing the supply of rags became a matter of grave concern for the paper maker, and increased efforts were made to find a substitute.

In Weeks' "History of Paper Making" we read that early in the 19th century the American Company of Booksellers, of New York, Philadelphia, and Boston, offered a gold medal valued at $50 for the greatest quantity and best quality of printing paper not less than 50 reams made from other material than rags and linen, cotton or wool, and a silver medal valued at $25 for the greatest quantity of good wrapping paper, not less than 40 reams, from new material. There is no record, however, that any claimants for these medals came forward.

Up to the present day, rags have continued to be an important raw material, although they have been limited chiefly to the higher grades of book and the so-called fine papers. In 1879 the consumption of rags amounted to 200,005 tons out of a total paper production of 452,107 tons. In 1919 the consumption of rags had increased to only 277,849 tons, having reached a maximum of 361,667 tons in 1914, while the production of paper had risen to 6,190,361 tons.

Straw was the first new material used to supplement rags to any substantial extent. Magaw in 1828 patented a process for pulping straw and began manufacture in that year. Straw prepared by this process was used for making wrapping paper, binders' board, and even printing paper. It was also found possible even to make bleached papers, but the cost did not permit competition with rags. Straw has continued to serve as the raw material for certain grades of paper and board. It has remained practically unchallenged as the fiber for corrugated board, and has maintained an important position in the board industry especially in the grain-growing states of Ohio, Illinois, and Indiana. By 1879 the consumption had risen to 245,838 tons. It stood at 353,399 tons in 1919, having reached a maximum of 367,305 tons in 1899.

The Introduction of Wood

The real development of paper making, and of printing as well, began with the introduction of processes for pulping wood. Rags gave excellent papers for printing, but the cost was too great and the supply too limited to encourage large expansion of the two related industries.

Attempts had been made to produce paper from wood long before its actual manufacture became a fact. As early as 1830 there was made by a chemical process from poplar sufficient paper upon which to print an edition of a newspaper. Various processes both chemical and mechanical were proposed, but up to 1863 only one had been a practical success. This was the soda process, developed by Burgess and Watt, who took out patents in England in 1852 and in the United States in 1854. The latter year marked the beginning of soda pulp manufacture. Two American plants were soon in operation, and by 1863 some 30 tons per day were being manufactured.

The soda process was applied to the broadleaf woods, such as poplar. The fibre of such species is too short to make a strong paper and is of value chiefly as a filler. For this reason production has not increased rapidly. In 1899 only 177,114 tons were produced, and a maximum was reached in 1920 with 463,305 tons, which represented only 12 per cent of the wood pulp produced that year.

A further advance in the manufacture of cheap paper came with the introduction of the mechanical process for pulping wood. A grinding process was patented by Keller, in Germany, as early as 1840. It was not until 1854, however, that it successfully passed its first commercial test. The process was introduced into the United States by Warner Miller in 1866, who secured the American rights to a German wood grinder and established a mill on the Hudson River in New York State.[1] The ground wood pulp, although possessing little strength in itself, was found to serve excellently as a filler, with rags, for newsprint, superseding the more expensive soda pulp in this respect.

The modern expansion of the ground wood industry did not take place, however, for a number of years, pending the discovery of a cheaper "binder" than rag. By 1889 the consumption of ground wood in the United States had risen to 225,000 tons, and thereafter the industry developed rapidly to its present-day proportions, as shown by the following production statistics:

Year	Tonnage	Per cent of total wood pulp
1899	586,374	50
1909	1,179,266	47
1919	1,518,829	43
1922	1,483,787	42

The real impetus to the manufacture of cheap paper and consequently of large tonnages had come about with the practical development and application of the sulphite process, which permitted the manufacture from wood of a long-fibered pulp replacing the rags satisfactorily and completely and, when mixed with ground wood pulp, making possible the production of news print wholly from wood. The sulphite process had been discovered in 1867 by Tilghman, in this country; but mechanical difficulties at first prevented its development on a practical scale. The process was improved three years later by Ekman, in Sweden, and after another twelve years was introduced commercially in the United States (1882). By 1899 the production had risen to 416,037 tons, and by 1909 to 1,017,631 tons, or 41 per cent of the total wood pulp produced that year. Since 1899 the rates of production of sulphite and of ground wood have become nearly equal as sulphite has found wider and wider application in the manufacture of almost all classes of paper.

[1] The first ground wood pulp produced in America was made by A. Pagenstecher at Curtisville, Mass., March 5, 1867. Hon. Warner Miller became interested several years later when he joined Mr. Pagenstecher in the business. Twenty-fifth Anniversary Number of the Paper Trade Journal.—Editor's Note.

The sulphite process, unlike the soda process, yields a light-colored pulp—one sufficiently light, in fact, to permit the use of the unbleached fiber in news print. For this purpose the long-fibered woods are selected because of the strength-giving properties of the pulps. The chemicals used are acid in character and do not dissolve resins; consequently the process is not adapted to the pines, particularly those found in the South. Northern jack pine and tamarack yield only with difficulty to the process. The broad-leaf woods are pitch free, but on account of their short fibers a satisfactory bleached pulp can be made from them more advantageously by the soda process. The sulphite process has, therefore, been limited chiefly to the reduction of spruce, fir, and hemlock.

The sulphate process, the most recently developed of all that are in common use, was first put into operation in Danzig as early as 1884. It was not brought to North America until 1907, when a mill was erected at East Angus, Quebec, to be followed soon after by the first plant designed for the process in the United States at Roanoke Rapids, N. C. Despite the newness of the process in this country, its development has been rapid. By 1914 the annual production of sulphate pulp in the United States had reached 52,641 tons. Thereafter it grew steadily to 243,681 tons, or 7 per cent of the total wood pulp production, in 1922.

The sulphate process more nearly approximates a universal pulping process for wood than any other in opeartion. Practically all species of wood yield to its defibering action. The product from the long-fibered species is consistently free from resin and in many cases possesses exceptional strength. The product from the short-fibered species can in some cases be bleached quite as easily as that prepared from the same woods by the soda process, and in many cases more easily. Two important drawbacks have, however, prevented the process from becoming more widely developed. One is the dark color of the unbleached pulps from coniferous woods; the other is the resistance which these dark pulps offer to the commercial bleaching methods. The characteristic dark color prevents the use of unbleached sulphate pulps in news print and limits their use for wrapping papers to those grades which do not demand a light color. Their imperfect reaction to ordinary bleaching prevents their introduction into those grades of paper which demand a bleached pulp of the high white and in some cases the high strength obtainable from sulphite pulps from spruce, fir, or hemlock. The sulphate process has, therefore, been used chiefly in the manufacture from more or less resinous woods of strong, dark pulps which form the basis of kraft wrapping paper and the strength-giving part of container board.

Geographic Distribution of the Wood Pulp Industry

The early development of the paper industry in America took place in the more densely settled parts of the country, i.e., in the Northeast. Here were the raw materials, rags and straws. Here also were the markets. The introduction of wood as the essential material failed to change the general location of the industry. In New York and New England were found the spruce, fir, and hemlock upon which both the ground wood and sulphite processes depended. Here also, and in Pennsylvania, was found the poplar for the soda process. With the gradual exhaustion of the spruce nearest at hand, the then abundant supplies in the Lake States and in Canada attracted development north and westward, until today the depletion of stands in this later territory is giving serious concern. Not only were the raw materials and the markets found in all the regions mentioned, and the markets in reasonable proximity, but here also was the cheap water power which was so essential to ground wood production and the cheap fuel necessary for the chemical processes.

It is quite obvious that the sulphate process, on its late arrival upon the scene, would also take root in the well-established pulping centers of the North and East.

As this branch of the industry expanded, however, the abundance of yellow pine, combined with the inducements of cheap fuel, cheap labor, moderate climate, and comparative nearness to markets, finally attracted the attention of the manufacturers to the South and away from the waning stands of Northern conifers. There was grave doubt, however, as to whether a satisfactory kraft pulp could be made from the Southern pines. To settle the question seemed so important that a sufficient number of pine logs were shipped to Sweden, the home of the pulphate process, for a commercial pulping test. The results proved so satisfactory that the son of the manager of the Swedish mill came to the United States, attracted by the favorable conditions here. He is today the manager of a prominent sulphate mill in the state of Louisiana.

The Pacific Coast states, far removed from Eastern markets, have developed from an abundant supply of spruce, fir, and hemlock a pulp and paper industry which provides for the Western and to some extent the Oriental markets. What part the West Coast industry will play in Eastern markets now that water transportation is an established fact remains to be seen. Account must be taken of this situation, however, in any adequate consideration of the South as a potential paper making region.

Centralization of the industry has taken place in the Northeast to a very great degree. Superimpose upon this picture of centralization the fact that the industry has concentrated upon the available spruce, and it will not be difficult to conceive of the serious position in which many of the mills are finding themselves today. Representing as they do large investments of capital, the mills cannot follow the receding forests. The wood must be brought to the mills, sometimes from more than a thousand miles away and at double cost. These are facts which are causing men to turn their attention and their activities to other regions for the development of the industry on a more sustained basis of operation. Without at this time discussing the merits of other sections of the country, let us consider in some detail the position which the South now holds in the industry and that which its facilities and opportunities seem to indicate for it in the future.

The Wood Pulp Industry of the South

In this discussion the South will be interpreted to include Missouri, Kentucky, West Virginia, Maryland, District of Columbia, Texas, and states south and east of them.

The following data based upon Lockwood's Directory of the Paper and Allied Trades for 1924, afford an insight into the relatively small part which the South is playing in the industry at the present time.

	In the United States	In the South
Number of firms	672	63
Number of paper mills	861	60
Number of pulp mills, whether connected with paper mills or not	336	39
The pulp mills are distributed by types of product as follows:		
Ground wood	168	6
Sulphite	99	5
Soda	31	8
Sulphate	31	15
Cotton fiber	6	4
Grass fiber	1	1

From Lockwood's statistics it appears that there was in the South at the beginning of 1924 a daily production capacity of about 1,892 tons of pulp and 2,096 tons of paper. The products were distributed among grades as follows:

	Mill capacity in tons per 24 hours
Ground wood pulp	85
Sulphite pulp	425
Soda pulp	445
Sulphate pulp	710
Cotton fiber	202
Grass fiber	25
Total pulp	1,892
Container board	140
Miscellaneous board	455
Kraft paper	458
Book and blotting paper	407
Rope papers	46
Miscellaneous papers	590
Total	2,096

The average daily production of wood pulp in the United States, based upon data for 1922 and assuming 300 cooking days in the year, is distributed as follows:

	Average production 1922, Tons per 24 hours
Ground pulp	4,946
Sulphite pulp	4,581
Soda pulp	1,400
Sulphate pulp	812
Total	11,739

The production of ground wood pulp in the South is negligible in amount. The total daily capacity of 85 tons is distributed among six plants ranging from 8 to 25 tons each. Raw material comes from the limited supply of spruce growing in the lower Appalachian Mountains or from pine, and the pulp is used in board or low grade products which do not demand light-colored pulp free from resin.

The capacity of Southern mills for sulphite pulp is less than 10 per cent of the total production of the United States. Sulphite manufacturers in the South depend primarily upon the limited Appalachian supply of spruce and hemlock. The entire capacity is concentrated in five mills, two in North Carolina, one in Virginia, and two in West Virginia. The product of these mills is used to a large extent in the manufacture of book papers and other grades requiring a bleached sulphite fiber.

In soda pulp, Southern mills make a much larger showing, their capacity being nearly one-third the total production of the United States. This branch of the industry is concentrated in eight mills, one in the District of Columbia, two in Maryland, one in North Carolina, one in Tennessee, and three in Virginia. The mills are near the larger centers of population and within reach of the markets for book paper and products of similar character.

The most important products, however, and those which are most characteristic of the South, are sulphate pulp, container

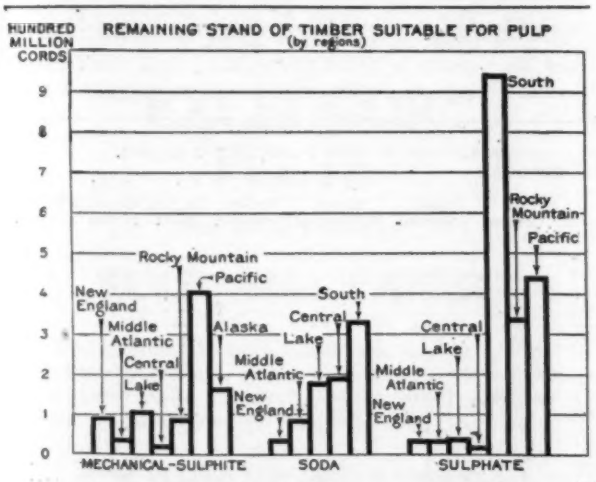
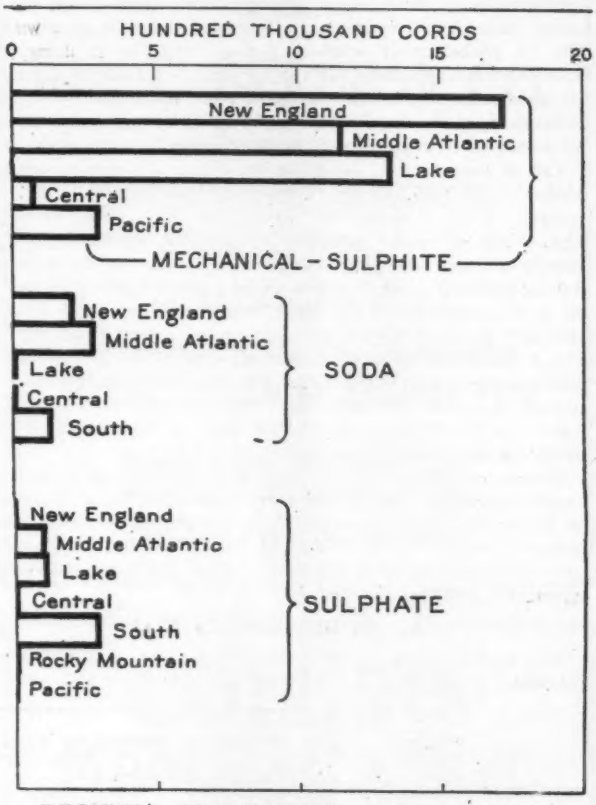


FIG. 1

board, and kraft wrapping paper. In these lines the daily capacities reported from the South aggregate approximately 710 tons of sulphate pulp, 140 tons container board, and 458 tons of kraft wrapping paper. An additional capacity of 50 tons of kraft paper, not recorded in Lockwood, has been placed in production recently, bringing the total for this grade up to 508 tons. Present output is, however, somewhat below rated capacity. Figures recently issued by the Southern Kraft Manufacturers' Association indicate a production, including that from the newest installations, of around 400 tons. The Southern sulphate pulp industry includes 15 pulp mills, 12 kraft paper mills, and 3 container board mills. The paper and board mills with but one exception are associated with the pulping plants, which are distributed among seven states as follows: Two in Georgia, five in Louisiana, one in Mississippi, two in North Carolina, one in Texas, and three in Virginia. Their location is co-incident with the supply of yellow pine which constitutes the raw material.

Paper Fiber Other Than Wood

A discussion of the paper industry in the South would be incomplete without reference to at least three developments looking



REGIONAL CONSUMPTION OF PULPWOOD BY PROCESSES, 1920

FIG. 2

toward the use for paper of characteristically Southern fibrous materials other than wood. Following the war the market was oversupplied with cotton linter and hull fiber which had been accumulated for munitions. It was found that these materials could be purified and applied to the manufacture of some of the higher grades of paper. While perhaps not constituting strictly a substitute for rags they possessed properties of their own which made them valuable in certain grades of writing, bond, book, and special papers. Four mills, three in Tennessee and one in Virginia, with a total rated capacity of 202 tons, have been established for the utilization of this class of fiber.

In Florida there has been established a mill for the manufacture of pulp from the saw grass which grows abundantly in some of the marshes of that state, and it is reported that a paper mill is in process of construction to utilize the product. Another development which is apparently flourishing is the manufacture of board from bagasse, the extracted sugar cane. The success of the enterprise is noteworthy in view of the repeated, though unsuccessful, earlier attempts to use bagasse in the paper industry. Passing mention might also be made of four mills in West Virginia having a total rated daily capacity of some 46 tons of paper manufactured

essentially from manila rope stock. These, however, do not represent a characteristically Southern development.

The Southern Forests and the Pulp and Paper Industry

Even a cursory survey makes it evident that the essential raw material for paper must continue to be wood; this despite the fact that many other fibrous materials are being used to a limited extent and will continue to be developed and used for special purposes and under special conditions of economic advantage. To meet permanently the increasing requirements for pulpwood will necessitate placing our forests upon a systematic basis of management for the production of wood as a crop. Only by so doing can manufacturers be assured of supplies within reasonable distances of their mills. Under such conditions the future growth of the industry must necessarily take place in those regions in which pulpwood can be grown in short rotation with a high rate of growth.

Let us see what the South has to offer in the way of present timber stands and future possibilities through sustained yields of growth. Table 1 shows the total United States stand of principal kinds of timber suitable for pulp, by regions, with the species grouped according to their adaptability to the existing pulping processes. Fig. 1 represents the various stands graphically. In striking contrast to the large supplies of the South is the relatively low consumption in the region, as shown graphically in Fig. 2. While the South contains nearly 178 mililon acres of forest land and has, since the passing of the white pine industry, led the country in lumber production, the cut of pulpwood timber has always been insignificant. In 1920 it reached only about 440,000 cords, not including slabs and waste.

General conditions in the South with reference to pulpwood stands and potential production of pulp have been ably discussed by Messrs. Clapp and Boyce in U. S. Department of Agriculture Bulletin No. 1211, "How the United States Can Meet Its Present and Future Pulpwood Requirements" from which the following paragraphs have been taken:

Spruce and Hardwood Pulp Wood

"Less than 10 million cords of the total stand are of the spruce-fir-hemlock group, the stands of which are very heavy and occupy a relatively limited area on the higher slopes of the Southern Appalachian Ranges. These stands, while of great present value, have much less significance in an enlargement of the existing industry or the development of a permanent pulp and paper industry than similar amounts of the same species in either New England, New York, or the Lake States. The possibility of reproducing these forests is much less certain, so that no safe prediction can be made as to their future as sources of pulpwood supplies.

"Various soda-pulp species—cottonwood, birch, beech, maple, yellow poplar, basswood, and red, black, and tupelo gums—are scattered over an enormous territory and aggregate 335 million cords. The remaining virgin stands are chiefly in the lower Mississippi bottom lands and along the Gulf Coast. A large part of the other hardwood stands have been more or less heavily and repeatedly cut over in the past. Considerable areas are now chiefly valuable for fuel or pulpwood. While cutting far exceeds growth, there are undoubtedly many areas from which a large volume of pulp material could be taken as thinnings and improvement cuttings, and in fact its removal might be made to constitute one step toward better forest management. It should easily be possible to take care of our present shortage of 196,000 cords of soda-pulpwood timber from this territory if proper methods of forest management begin with the cutting, and to enlarge this at the rate of 23,000 cords a year to absorb our increasing needs for years to come. Relatively small areas could, if worked for pulp timbers alone, be made to produce the entire volume required.

Pine Pulp Wood for Sulphate Pulp

"Three-fourths of the pulp stand consists of various species of Southern yellow pine, amounting to about 940 million cords. Under present pulping processes it is being utilized almost exclusively for sulphate pulp and wrapping paper and boards.

"The cut of Southern pine now exceeds its growth by about three times. Such second growth as we have is almost entirely voluntary. Most of the stands, in fact, have persisted in spite of destructive lumbering and equally destructive naval-stores operations, and annually or periodically recurring fires. With a certain amount of care, the leaving of a few trees in cutting, fire pro-

TABLE 1. TOTAL STAND OF TIMBER OF PRINCIPAL KINDS SUITABLE FOR PULP, BY REGIONS.
(MILLIONS OF CORDS.)

Kind of timber and principal present or prospective use for pulp.	New England	Middle Atlantic	Lake	Central	South Atlantic	Lower Mississippi	Rocky Mountain	Pacific coast	Total United States	Southeast Alaska
Sulphite, mechanical, and sulphate:										
Spruce and fir	[1]85.5	14.0	17.1	3.4	3.4	....	85.5	205.1	414.0	45.3
Hemlock	6.4	23.9	51.3	19.7	6.4	....	2.5	200.9	311.1	121.4
Jack pine	....	....	38.4	....	....	....	....	....	38.4	....
Total	91.9	37.9	106.8	23.1	9.8	....	88.0	406.0	763.5	166.7
Soda:										
Aspen and cottonwood	6.4	2.2	27.3	10.7	5.1	21.4	12.8	....	85.9	.2
Birch-beech-maple	29.0	80.3	136.8	102.6	16.2	16.3	....	....	381.2	.1
Yellow poplar	....	.7	....	29.9	15.4	1.0	....	....	47.0	....
Basswood	2.6	2.2	17.1	10.7	1.7	....	....	....	34.3	....
Red gum	....	.9	....	18.8	51.3	97.4	....	....	168.4	....
Black and tupelo gums	....	1.1	....	21.3	54.7	54.7	....	....	131.8	....
Total	38.0	87.4	181.2	194.0	144.4	190.8	12.8	....	848.6	.3
Sulphate:[2]										
Southern yellow pine	1.1	15.1	....	21.4	453.0	487.2	....	....	977.8	....
Tamarack and larch	.9	....	21.4	....	....	....	34.2	12.8	69.3	....
White and sugar pines	35.0	22.2	21.4	2.5	4.3	....	42.7	81.2	209.3	....
Western yellow pine	....	....	....	....	....	....	136.8	384.6	521.4	....
Lodgepole pine	....	....	....	....	....	....	128.2	12.8	141.0	....
Total	37.0	37.3	42.8	23.9	457.3	487.2	341.9	491.4	1,918.8	....
Regional total	166.9	162.6	330.8	241.0	611.5	678.0	442.7	897.4	3,530.9	167.0

1 Contains no allowance for reduction in stand by spruce bud worm, which amounts to 40 per cent or about 27 1-2 million cords in Maine.

2 Contains no allowance for Douglas fir although a small volume is now being used. The stand is very large, probably two or three times that of pine and other species suitable for sulphate pulp.

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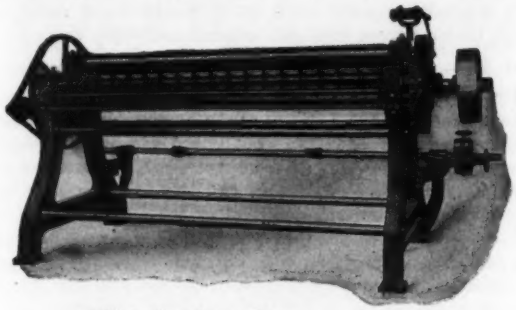

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tection during the critical stages of tree development, and similar measures, the growth of the Southern pines could be enormously increased. With a reasonably distributed industry and with the immediate adoption of forestry measures there should be no difficulty in taking care immediately, in the South alone, of our present total dependence upon foreign countries for an equivalent of 773,000 cords of sulphate pulpwood and of the annual increase in our needs of 110,000 cords a year. The demand for small material for pulpwood would undoubtedly stimulate rather than retard the interest in timber growing in the South through increasing the value of the product. Much of the material needed for an enlarged Southern paper industry dependent on pine could be secured from desirable thinnings and from small or defective logs. Even without forest management the pulp and paper industry could probably expand in the South through ability to take a good deal of timber away from the lumber industry in a competitive market; but this would not be particularly desirable from the standpoint of the public.

"The Southern pines occur in both the Southern-pine and the oak-pine type. Possible growth of the pine alone under intensive forestry is estimated at more than 40 million cords a year. Much of this will be needed for saw timber, fuel, and other purposes, but the total dwarfs present sulphate-pulp requirements of 1,220,000 cords and the current rate of increased demand so greatly that there should be no difficulty in meeting enormously enlarged future needs, provided the adoption of intensive forestry methods precedes or at least accompanies the development of the industry. If future developments make possible the use of pine for other pulps a very large volume of pulpwood will be available. The pulp and paper industry has also the opportunity to devote relatively small areas exclusively to pulpwood production. The total sulphate requirements could be grown on 2 million acres, for example.

"Here, as in the West, is the opportunity for producing material of pulpwood size in very short rotations. Fifteen to twenty years in the South will produce large yields of thinnings, which can be repeated periodically until it is desirable to remove the remaining stand for either lumber of pulpwood, or for both.

"Other conditions in the South are believed to be favorable for an immediate and permanent future enlargement of pulp and paper making. The Southern mountain streams furnish ample power. Forest lands occur in both large and small holdings. A pulp and paper concern has before it the alternative of acquiring its own lands or of placing its dependence upon the timber grown upon farm wood lots, or other and larger holdings. Operators desiring to locate in the South and to acquire their own timberlands are not restricted to denuded forest lands. It is easily possible to secure at relatively low prices partly grown lands for future needs, as well as timber already large enough for pulp.

"In much of the South there is the possibility, with the longleaf and slash pines, of combining naval stores with pulp production or of combining both with lumber production, and finally of extracting the resinous products from the pulpwood itself. The South has a distinct advantage over the Western pine stands in pulp and paper manufacture on account of the handicap to the Western States of distance from the great Eastern and Middle-Western markets."

Other Factors Favoring the South

There are in addition several advantages which the South possesses which do not relate directly to the wood supply. The climate favors woods operations over a large part of the year, making possible a continuous supply of wood without maintaining large quantities in storage—a fact permitting not only the elimination of large carrying charges but also a great reduction of loss through decay. The cost of constructing and heating mill buildings is less than in colder climates. Coal, gas, and oil fuels are available at moderate cost. Chemicals required for the pulping operation are not lacking.

Furthermore, besides a good and growing local market, the major markets of the East are readily accessible. Due consideration of the current capacities of the market must, however, be had in formulating plans for expansion of the industry in the South. This fact of fundamental economic importance may, in view of the attractive opportunities for development, be lost sight of and a temporary depression brought about which would retard rather than promote the permanent expansion which must surely come.

Modified Pulping Processes and Wider Use of Species

But what of the possibility of the development of ways and means for the utilization of those species of the South which are available in abundance, which reproduce readily and rapidly, and yet find little outlet through existing pulping processes? Is there any hope of their finding use for products of large tonnage demand through the modification of existing processes or the introduction of new ones? A process which would give pulps from such woods as beech, birch, maple, poplar, and the gums to compete with ground wood pulp would revolutionize the news print situation in the North—at least it would go a long way toward saving the industry in the United States, by affording time for a greatly increased growth of spruce, hemlock, and fir while a portion of the news print industry established itself in the South.

Again, a process whereby the alkaline cooked pulps from yellow pine could be bleached economically and to a bright color would permit the expansion of the book paper industry into regions where yellow pine is found in close proximity to the gums and cottonwood. If such a process would permit the production of a bleached pulp of high strength in competition with bleached sulphite for bright colored wrapping and specialty papers, there would be an added probability of the extension of these branches of the industry into the South.

All of the problems outlined above are claiming the attention of the Forest Service in its research activities at Madison. The production of book paper from yellow pine and gums is already an established fact. Successful, though limited, commercial practice has confirmed the favorable indication of the laboratory results. The satisfactory quality of the product is well examplified by the paper on which this issue is printed.

Plans for an investigation looking to the production of a strong bleached pulp from yellow pine are being formulated.

Another investigation which has been actively under way for the last 18 months has had for its object the development of a process that would permit the extensive use of the broad-leaf woods—particularly poplar, birch, and the gums—in news print, with a corresponding reduction in requirements for ground wood pulp and sulphite. Whether this investigation is destined to work out commercially in accordance with the results of laboratory tests or not, it at least points to the possibilities of new or modified processes. The indications are, indeed, promising. Such facts, together with the critical need of the industry, are ample justification for a large increase in research activities having as their objective the wider utilization of the hardwoods. The developments desired may well prove to be the chief means of offsetting any pulpwood deficit in our present industry until increased amounts can be grown; or they may go still farther toward making possible the growing and consuming of a larger proportion of our pulpwood requirements in the South.

Japanese Paper Consumption

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., July 14, 1925.—Japanese paper mills, members of the association, reported a consumption for January of 2,272,667 cubic feet of wood, 2,236,761 pounds of rags, 845,813 pounds of straw, and 1,962,496 pounds of paper, in addition to 17,800 short tons of chemical pulp and 16,981 tons of mechanical pulp according to a report received by the Paper Division of the Department of Commerce. Of the chemical pulp 12,199 tons, and of the mechanical pulp 15,815 tons, were manufactured by the mills.

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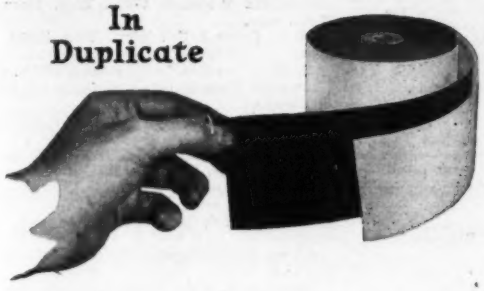

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(*Continued on page 68*)

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PULP PAPER AND POWER PLANTS

ENGINEERS & CHEMISTS
INDUSTRIAL DESIGN
PLANT IMPROVEMENT
LABORATORY TESTS

Imports of Paper and Paper Stock

(*Continued from page 66*)

Brown Bros. & Co., New York City, Bristol, 180 coils.
Brown Bros. & Co., Marengo, Hull, 46 coils.
Brown Bros. & Co., S. Ventana, Bremen, 15 coils.

CHINA CLAY.

C. T. Wilson Co., Inc., New York City, Bristol, 25 casks.

WOOD PULP

E. M. Sergeant & Co., Drottningholm, Gothenburg, 897 bls. dry soda pulp.
The Borregaard Co., Inc., Stavangerfjord, Sarpsborg, 300 bls. sulphite pulp.
International Acceptance Bank, Veendam, Rotterdam, 850 bls. wood pulp.
Bulkley Dunton & Co., Idefjord, Gefle, 2250 bls. sulphite pulp, 456 tons.
National City Bank, Idefjord, Sundsvall, 5,500 bls. sulphite pulp, 1,100 tons.

BOSTON IMPORTS

WEEK ENDING JULY 11, 1925

G. F. Malcolm, Savannah, Liverpool, 26 cs. tissue paper.
G. F. Malcolm, Clairton, Liverpool, 14 cs. tissue paper.
Wilkinson Bros. & Co., Inc., Carlsholm, Gothenburg, 17 bls. paper.
Harvey & Wessner, Clairton, Liverpool, 7 bls. rags.
J. B. Moors & Co., by same, 10 bls. rags.
J. T. Lodge & Co., by same, 4 bls. rags.
American Express Co., by same, 114 bls. rags.
Castle & Overton, Inc., West Haven, Rotterdam, 37 bls. rags.
J. B. Moors & Co., Newfoundland, Liverpool, 11 bls. rags.
First National Bank of Boston, by same, 4 bls. rags.
J. T. Lodge & Co., by same, 57 bls. rags.
G. M. Graves Co., Savannah, Liverpool, 60 bls. bagging.
Hughes Fawcett, by same, 17 bls. flax waste.
Burmon & Bolonsky, by same, 19 bls. rags.
J. T. Lodge & Co., by same, 61 bls. rags.
American Express Co., by same, 2 bls. rags.
Draper Co., by same, 28 bls. rags.
T. D. Downing & Co., by same, 89 bls. rags.
W. Schall & Co., Savannah, Glasgow, 42 bls. rags.
Second Bank of Boston, by same, 47 bls. rags.
Baring Bros. & Co., Ltd., by same, 84 bls. rags.
G. M. Graves Co., by same, 133 bls. rags.
Furness Withy & Co., by same, 24 bls. rags.
G. M. Graves Co., West Cohas, Glasgow, 70 bls. paper stock.
W. Schall & Co., Deuel, Hamburg, 36 bls. rags.
Second National Bank of Boston, by same, 104 bls. rags.
Ira L. Beebe & Co., Inc., by same, 375 bls. wood pulp.
Castle & Overton, Inc., by same, 700 bls. wood pulp.
Castle & Overton, Inc., Lorain, Hamburg, 280 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Malmen, Gefle, 200 bls. dry pulp.
Pagel, Horton & Co., Inc., Malmen, Sundsvall, 450 bls. sulphite pulp.
Johaneson, Wales & Sparre, Inc., by same, 4,500 bls. sulphate pulp.
Johaneson, Wales & Sparre, Inc., Malmen, Gothenburg, 175 bls. sulphite pulp.
Price & Pierce, Ltd., by same, 500 bls. dry pulp.
Scandinavian Pulp Agency, Inc., by same, 127 bls. sulphite pulp.
Scandinavian Pulp Agency, Inc., Carlsholm, Gothenburg, 1,778 bls. sulphite pulp.
Scandinavian Pulp Agency, Inc., by same, 4,064 bls. kraft pulp.
Scandinavian Pulp Agency, Inc., by same, 254 bls. sulphate pulp.
J. Anderson & Co., by same, 3,000 bls. sulphite pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JULY 11, 1925

Castle & Overton, Inc., Montana, France, 571 bls. rags.
Castle & Overton, Inc., by same, 261 bls. waste paper.
Castle & Overton, Inc., Duquesne, England, 279 bls. rags.
Castle & Overton, Inc., Leerdam, Rotterdam, 192 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 11, 1925

F. Weber, Median, Liverpool, 6 cs. drawing paper.
Koons, Wilson & Co., by same, 1 cs. photo paper.
Brown Bros. & Co., Eastern Victor, Rotterdam, 213 pgs. packing paper.
F. Weber, Montana, Hamburg, 3 cs. paper.
Considine Co., America, Oslo, 24 rolls paper.
Atlantic Paper Co., Savannah, Glasgow, 32 cs. paper.
A. W. Fenton, Inc., by same, 64 bls. rags.
G. M. Graves Co., by same, 160 bls. rags.
C. J. Webb Sons Co., by same, 14 bls. rags.
J. L. Vandiver, by same, 93 bls. tow waste.
J. L. Vandiver, by same, 32 bls. rags.
E. J. Keller Co., Inc., Malmen, Gothenburg, 180 bls. rags.
Philadelphia National Bank, Luxpalile, Palermo, 209 bls. linseys.
E. Butterworth & Co., Inc., New York City, Bristol, 117 bls. rags.
National City Bank, Winona, Leghorn, 187 bls. rags.
Philadelphia National Bank, Salina, Leghorn, 68 bls. rags.
Seaboard National Bank, by same, 104 bls. rags.
Brown Bros. & Co., Hannover, Bremen, 679 bls. rags.
New York Trust Co., by same, 22 bls. bagging.
National City Bank, by same, 487 bls. rags.
Market Street National Bank, by same, 64 bls. rags.
Belgian Bank, by same, 104 bls. rags.
Castle & Overton, Inc., by same, 239 bls. rags.
H. Feldman Co., by same, 56 bls. rags.
Guaranty Trust Co., by same, 67 bls. rags.
Chase National Bank, Montana, Hamburg, 167 bls. rags.
L. H. Abenheimer, by same, 282 bls. rags.
Rohner & Gehrig Co., Montana, Antwerp, 32 bls. rags.
Philadelphia National Bank, by same, 38 bls. rags.
Brown Bros. & Co., by same, 36 bls. rags.
Philadelphia National Bank, by same, 383 bls. rags.
E. J. Keller Co., Inc., by same, 1,043 bls. rags.
E. Butterworth & Co., Inc., by same, 90 bls. flax waste.
C. J. Webb Sons Co., Median, Liverpool, 21 bls. rags.
Castle & Overton, Inc., by same, 67 bls. rags.
G. M. Graves Co., West Cohas, Glasgow, 37 bls. rags.
Brown Bros. & Co., Eastern Victor, Antwerp, 44 bls. rags.
The Stone Bros. Co., by same, 64 bls. rags.
Market Street National Bank, by same, 280 bls. rags.
Castle & Overton, Inc., by same, 589 bls. rags.
E. J. Keller Co., Inc., by same, 712 bls. rags.
Castle & Overton, Inc., Eastern Victor, Rotterdam, 77 bls. rags.
Union National Bank, by same, 119 bls. rags.
Brown Bros. & Co., by same, 121 bls. rags.
E. J. Keller Co., Inc., by same, 75 bls. rags.
Philadelphia National Bank, by same, 40 bls. rags.
Castle & Overton, Inc., Idarwald, Hamburg, 144 bls. rags.
Castle & Overton, Inc., Eastern Dawn, Rotterdam, 71 bls. rags.
Castle & Overton, Inc., Hannover, Bremen, 300 bls. rags.
Castle & Overton, Inc., M. Mariner, Manchester, 58 bls. rags.
Castle & Overton, Inc., Caracoli, Havre, 57 bls. rags.
Castle & Overton, Inc., Winifredian, England, 91 bls. rags.
Castle & Overton, Inc., Cobo Torres, Italy, 35 bls. rags.
Castle & Overton, Inc., C. T. Maru, Hamburg, 451 bls. rags.
Castle & Overton, Inc., ———, Germany, 138 bls. rags.
J. L. Vandiver, Savannah, Glasgow, 111 coils old rope.
B. L. Soberski, America, Oslo, 300 bags wood flour.
J. Anderson & Co., by same, 450 bls. wood pulp.
The Borregaard Co., Inc., by same, 125 bls. wood pulp.
National City Bank, by same, 300 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Hjelmaren, Gothenburg, 762 bls. wood pulp.
Castle & Overton, Inc., ———, Germany, 420 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JULY 11, 1925

D. S. Walton & Co., Idarwald, Hamburg, 118 bls. wrapping paper.
E. J. Keller Co., Inc., by same, 212 bls. rag pulp.
National Bank of Commerce, Westerner, Antwerp, 112 bls. rags.
Garfield National Bank, Beemsterdyk, Rotterdam, 29 bls. rags.
Pagel, Horton & Co., Inc., Idefjord, Gefle, 6,000 bls. sulphate, 1,217 tons.
Pagel, Horton & Co., Inc., by same, 2,500 bls. sulphite, 479 tons.
Bulkley, Dunton & Co., by same, 1,875 bls. sulphite, 380 tons.
Price & Pierce, Ltd., by same, 800 bls. sulphite, 101 tons.
Castle & Overton, Inc., Idarwald, Hamburg, 1,100 bls. wood pulp.
Perkins, Goodwin & Co., America, Oslo, 1,800 bls. wood pulp.
E. M. Sergeant & Co., by same, 240 bls. wood pulp.
J. Anderson & Co., by same, 660 bls. wood pulp.
Buck, Kiaer & Co., Inc., by same, 1,625 bls. sulphite, 325 tons.

CHICAGO IMPORTS

WEEK ENDING JULY 11, 1925

A. B. Dick Co., Tsuyama Maru, Kobe, 5 cs. paper.

SAN FRANCISCO IMPORTS

WEEK ENDING JULY 11, 1925

Frazer & Co., Tsuyama Maru, Yokohama, 300 bls. rags.

LOS ANGELES IMPORTS

WEEK ENDING JULY 11, 1925

J. W. Robinson Co., Tsuyama Maru, Kobe, 3 cs. paper.

PORTLAND IMPORTS

WEEK ENDING JULY 11, 1925

Lagerloef Trading Co., West, Gotomska, 5,268 bls., 878 tons, chemical pulp.

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Quality and service guaranteed by the Largest Source of Supply

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Caustic Soda

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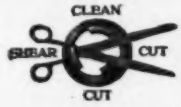
Camden 

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Kalamazoo, Michigan

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, July 15, 1925.

The inventory period has passed with some of the paper consumers and buying is taking on a slightly freer aspect along certain lines. Others are still in the midst of inventory and some of them show a tendency to prolong it somewhat longer than is usual this year. It is encouraging to note from all available reports that business has not struck the low ebb that it reached in July of last year. It is slow-pitifully slow, it is true—but the market can be patient as long as business keeps ahead of last year's record. There is nothing as yet to justify the prophecy of the occasional pessimist who had predicted that the summer would see the market in an even slower position than that which it occupied last year. Mills have taken advantage of the partial cessation of orders and are making necessary repairs, taking account of stock and getting ready for the really good business which is anticipated in September. The movement of paper is still fair and while orders are almost without exception small they are coming along steadily and helping to keep things from coming too near a standstill. In some lines business is better than has been looked for and above the normal for this season of the year. Unless an unlooked for slump occurs it seems fair to predict that the market will pass through the trying hot period comfortably well and will emerge with flying colors for the Autumn business.

The news print market has not been disturbed by the early announcement by a Canadian mill of a cut in the price of news print to become effective on January 1. None of the other mills have come forward with a similar announcement and, as the PAPER TRADE JOURNAL stated a week or two ago, they are not likely to be rushed into any premature statement at this time. The demand for news print is remarkably good for this time of the year although there is a limited yielding to cuts in circulation and a curtailment of advertising patronage. The present call is sufficient to keep the mills running on a fairly full schedule and that is doing as well as could be expected for mid-July.

The book paper demand is steady. Contract supplies are being taken freely and the mills have their hands about as full as they care to have them. Coarse papers are slow which is in keeping with the season but fine papers are in good favor and the manufacturers say there is no marked dearth of orders.

There is real activity in boards and the mills are securing some excellent orders for this time of year. The market is strong and there is every indication that prices may soar to higher levels right in the midst of the summer period.

Mechanical Pulp

There is fair activity in the mechanical pulp market. While there is a fair amount of surplus stock on hand there is no strenuous efforts being made to unload it for the producers are quite willing to store it as a precaution to a long protracted drought which may result in unfavorable working conditions before the summer is over.

Chemical Pulp

The chemical pulp demand is very good although buying is being done cautiously and only for the needs which are within sight. It is generally believed that any increase in demand will be followed by a schedule of higher prices. Consumers, however, are well satisfied to get along with what they actually need. In other words they had rather face the possibility of paying higher prices later on than order today more than they can find actual use for immediately.

Rags

Orders for small lots are the rule during inventory period and this year is proving no exception. Prices are holding to their mark for the dealers are none too well satisfied with their present margin of profit and are unwilling to cut into it any deeper. They prefer to wait for the better business which is bound to come sooner or later.

Old Rope and Bagging

There is a good demand for old bagging and the prices are firm. Roofing bagging is again in superior demand. Old rope is not in great demand and the trend of prices is downward although no general revision has yet taken place.

Waste Paper

The paper stock market is quieter than it has been but prices are fairly well maintained. It is expected that now inventory is over or about to be over that business will undergo a new impetus and that business will begin to flow in with considerable alacrity.

Twine

Twine is in a languishing condition. Orders are few and far between and are small in volume. Prices lack the energy to go either way and the twine men find themselves in about the condition which marked this period a year ago.

To Dedicate Library Given by Bartlett Arkell

[FROM OUR REGULAR CORRESPONDENT]

CANAJOHARIE, N. Y., July 13, 1925.—Arrangements are being made for the dedication of the new village library, the gift of Bartlett Arkell, president of Arkell & Smith, paper bag and box makers, and his sister to Canajoharie as a memoriam to the late Senator James Arkell and wife. James Arkell was the father of Bartlett Arkell and was one of the founders of Arkell & Smith and the Beechnut Packing Company, of which Bartlett Arkell is also president. The date of the dedication ceremony has not been set, final arrangements awaiting the return of Mr. Arkell from Europe.

The new library is located almost directly opposite the main building of the Beechnut Company. It is a single story building of rough stone with a very deep cellar. The stones used in the construction work were originally quarried in this vicinity and were taken from the old paper box factory of Arkell & Smith, a village landmark where Bartlett Arkell began his business carrer. The cost of the building has been estimated at $25,000 and the furnishings will cost many thousands more.

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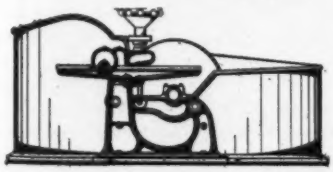

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Builders of sheet machines, miniature Paper Dryers and Jordans, Slowness Testers, etc.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, July 15, 1925.

While the chemical market is undeniably slow at this time there are some encouraging features to conditions which buoy up the hopes of the chemical men. The slow summer period promises to be benefited by the fact that buying has for so long a time been of the hand-to-mouth order. That sort of buying is generally looked upon as the bane of the market but, in this instance, it is likely to prevent the market from sinking so deeply into the rut which it is bound to get into during June, July and August. This is, of course, a logical result. For a long time buying has been done cautiously. It has been hard work and, in many cases, impossible to get the consumer to take a single step beyond his immediate needs. As a consequence the summer finds the average consumer with no stock to fall back on. His summer needs may be slight but they will be something and he will be obliged to come into the market and place his orders now and then although they may be meager orders at best. On the other hand, if his buying had been liberal enough so that summer finds him with a small surplus of stock it might prove sufficient to enable him to stay out of the market for the dull period. So as every ill wind is bound to blow beneficially to someone the summer is likely to be less dull than it would be if buying had been normal for the past three months. The first half of June has been considerably better from a sales standpoint than were the first two weeks of the same month last year. There is every reason to believe that the remainder of the summer will show a slight edge on the same period of last year. Concession tactics are not being practiced to an extent that is likely to stampede the market and there is every reason to believe that prices will be held to in much better shape than they were last summer and that business will be conducted on a much healthier basis.

BLANC FIXE.—Blanc fixe is in practically the identical condition it was in a week ago. The summer quiet has settled over it and buying is in very limited quantities, the disposition of consumers being to tide themselves over the hot weather period with the purchase of just as little stock as is possible. Concessions, however, are being resorted to in only rare cases so that there is no particular inducement to consumers to come out of their shells and show a little more liberality. This state of affairs may be expected to continue until September. The pulp is quoted at from $60 to $70 a ton and the powder at from $75 to $90 a ton.

BLEACHING POWDER.—While there has been a considerable let-up in the demand for bleaching powder there is not much stock flowing into the market and the demand is still sufficient to keep the available stock moving fairly well. Supplies are, of course, being taken out on the contract basis with reasonable regularity. The quotation is 1.90 cents a pound.

CAUSTIC SODA.—The buying of caustic soda on contract provides for sufficient withdrawals to protect the market against excessive accumulations but spot buying has, for the time being, gone literally to smash. It is reported that prices are being shaded here and there but the former quotation of from 3.10 to 3.15 cents a pound is being generally maintained.

CASEIN.—Casein is getting down to the low spot of summer buying which is a wide contrast from the high spots of other periods of the year. Demand, as slow as it is, is, however, considerably better than it was a year ago at this time. The quotation of 12½ cents a pound is being shaded in some quarters.

CHINA CLAY.—China clay has naturally dropped off materially from the splendid demand it has been enjoying and the buying has now setlled down to a more or less hand-to-mouth policy. That precautionary policy may be expected to continue until summer is over. The imported grades are still quoted at from $16 to $20 a ton and the domestic grades at from $12 to $15 a ton.

CHLORINE.—Chlorine demand fell off considerably recently but it is not getting any worse and there is still a fair amount of business reaching the market. It is selling at from $4.50 to $7.00 a pound in tanks.

ROSIN.—These are slow days for rosin, the sluggishness of the period having interrupted an exceptionally energetic run of this commodity. The naval store centers quote it at from $6.50 to $6.70.

SALT CAKE.—Salt cake has slumped considerably, some of the salt cake users now being subject to a partial cessation of business. The glass trade remains good, however, and a very excellent demand from this source and straggling orders from here and there keep salt cake going. It is quoted at from $16 to $17 a ton.

SODA ASH.—Contract withdrawals are about all soda ash has to cling to just now and the commodity is therefore rather slow. It is quoted at 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—Sulphate of alumina is experiencing the common fate of the chemicals at this time of the year but it is doing much better than it was in July of last year. From 1.40 to 1.45 cents a pound at the Eastern works is quoted for the commercial grades while from 2.10 to 2.25 cents a pound is being quoted for the iron free.

SULPHUR.—Sulphur is having a fair contract run and that is about all that it is doing. The price is from $18 to $19 a ton.

TALC.—Talc is doing much better than it was at this time last year but the demand is none too energetic at that. The quotation is from $17 to $18 a ton.

Changes in Timken Roller Bearing Co.

CANTON, Ohio, July 15, 1925.—The Timken Roller Bearing Company announces with deep regret the retirement of Heman Ely, vice president and treasurer, from active connection with the company. Mr. Ely became associated with the Timken Company in 1909 as secretary and in 1916 was also appointed treasurer. He became vice president and treasurer in 1920.

Mr. Ely's retirement closes a sixteen year association with the Timken Company. Beyond the statement that he will take a short vacation, Mr. Ely announces no plans for the future.

The board of directors of the Timken Company, following Mr. Ely's retirement, consists of H. H. Timken, W. R. Timken, J. G. Obermier, M. T. Lothrop, and J. F. Strough, with officers as follows: H. H. Timken, president; W. R. Timken, vice president; J. G. Obermier, vice president; M. T. Lothrop, vice president; H. J. Porter, vice president; J. F. Strough, secretary and treasurer; W. A. Brooks, assistant secretary.

H. J. Porter, who has been General Sales Manager is advanced to Vice President in Charge of Sales. L. M. Klinedinst, heretofore assistant to Porter, becomes General Sales Manager of the Industrial Division.

Elliott A. Allen has been appointed District Manager of Sales for The Timken Roller Bearing Company, in its New England territory. Mr. Allen will maintain an office at 1107 Commonwealth avenue, Boston, Mass.

Australian Visits Ontario Paper Mills

Robert G. Nall, of R. G. Nall, Limited, of Sydney, Australia, manufacturers of paper boxes, playing cards, etc., spent a few days in Toronto recently and will be in Ontario for some time visiting various paper mills. He states that the paper being sold in Canada for manufacturing playing cards is superior to the English product for that purpose. Mr. Nall added that business in Australia was good at the present time and as a result of the new treaty being negotiated between Canada and the Australian Government, trade was likely to be given a further impetus and the result would be beneficial to both.

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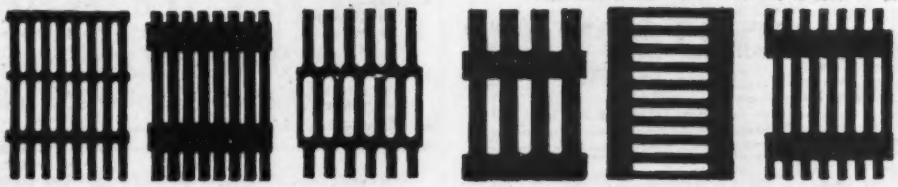

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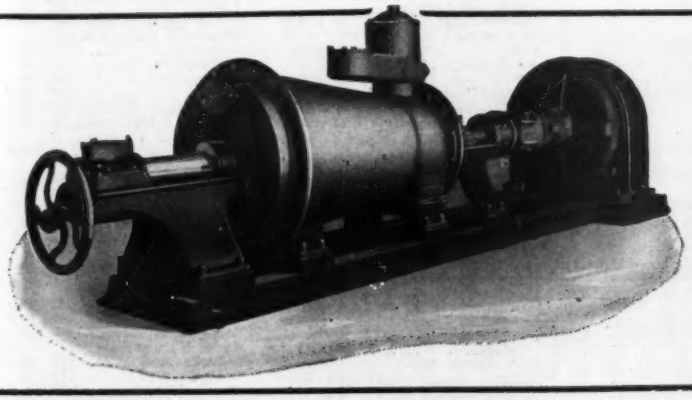

The

DILLON JORDAN

Our latest Improved Machine, three sizes; belt or direct connected motor driven. All Bearings self-oiling, adjustable and water-cooled. Fitted with Standard Steel Knives, Special Heat Treated Steel, Bronze or Manganese Steel Plug and Shell Lining.

For full particulars apply to

DILLON MACHINE CO., Inc.

Builders of Paper Mill Machinery

Lawrence, Mass.

Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Abitibi Power and Paper, Gen. 6s 1940	101	103*
Advance Bag and Paper, 7s 1943	98	100*
Bastrop Pulp and Paper, 7½s 1932	104	108*
Brompton Pulp and Paper, 6s 1927	93	95
Beaver Board, 8s 1933	92	94
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Board, N. Y. Curb, 8s 1933	93	95
Beaver Products Corp., 7½s 1942	104	106
Belgo Canadian Paper, 6s 1943	100	101
Brown Paper Co., 8s 1931	102	...
Berlin Mills, 5s 1931	98	...
Bryant Paper Co., 6s 1942	98	101
Brown Company Serial, 6s 1925-43	97	100
Central Paper, 6½s 1925-42	91	94
Cape Breton Pulp and Paper, 6s 1932	100	...
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	97	100*
Donnaconna Paper Co., Ltd., 6s 1940	99	101
Eddy Paper, 7s 1931	97	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	87	95*
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co, 7s 1942	95	99
Eddy Paper Co., 7½s 1931	95	...
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	99	...
Hercule Corp'n, 8s 1936	99	102
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	90	97
Kenmore Pulp and Paper Co., 6s 1937	89	...
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	104	...
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	102	105
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	101	...
Paterson Parchment Paper, 5½s 1927-28	98	100
Paterson Parchment, 6s 1938	98	100
Parker, Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	100	102
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Series A, 8s 1940	115	118
Riordan Paper, 6s 1924	95	...
Riordan Pulp and Paper, Ltd., 6s, 1929	33	35
River Raisin Paper, 8s 1936	104	106
St. Maurice Paper Co., Ltd., 5½s, 1929	98½	99¾
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	98	100
Smith (Howard) Paper Mills, 6s 1934	98	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	88	92
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
S. D. Warren Company, 6s, 1945	97	100
Whittaker Paper, 1st 7s 1942	96	...
Watab Paper Co., 6½s 1942	101	...
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	87	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	69	70
Abitibi Power and Paper, Pfd	108	...
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	77	...
Beaver Board, Com	4	6
Beaver Board, Pfd	34	38
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Brompton Pulp and Paper, Cap	20	23
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A., Pfd	98	SW
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	260	270
Jessup & Moore Paper, pfd	73	77
International Paper Co., Com	66	68
International Paper Co., Pfd. 6%	78	80
Mengel Company, Com	64	68
Mengel Company, Pfd	83	93
Oxford Papers, Com	93	97
Oxford Paper Co., Pfd	98	...
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd	99	...
Price Brothers, Cap	39	40
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	83	87
St. Regis Paper Co., Cap	54	56
Spanish River Pulp and Paper, Com	104	105
Spanish River Pulp and Paper, Pfd	115	117
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper. Cap	44	47
West Virginia Pulp and Paper, Pfd	95	...
Whittaker Paper, Com	53	...
Whittaker Paper, Pfd	15	...

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@18.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream		
White No. 1	.70	@ .90
Colored	1.00	@ 2.00
White No. 2	.65	@ .75
Anti-Tarnish	1.25	@ 2.35
Kraft	.85	@ .95
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	4.25	@ 4.50
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.25	@ 9.50
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.50	@ 4.00
Fibre Papers—		
No. 1 Fibre	4.50	@ 5.00
No. 2 Fibre	4.25	@ 4.75
Common Bogus	2.50	@ 2.75
S. Screening	3.00	@ 3.50
Card Middler	4.00	@ 5.00
Boards—per ton—		
News	45.00	@47.50
Straw	57.00	@60.00
Chip	42.00	@45.00
Binders' Boards	72.50	@77.50
Sgl. Mla. Ll. Chip	60.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	33.00	@37.00
(F. o. b. Mill)		
No. 1 Domestic	28.00	@32.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	4.00	@ 4.50
Easy Bleaching	2.90	@ 3.25
No. 1 strong unbleached	2.75	@ 3.25
No. 2 strong unbleached	2.45	@ 2.80
No. 1 Kraft	2.95	@ 3.20
Sulphate—		
Bleached	3.75	@ 3.95
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.75	@ 4.50
Easy Bleaching Sulphite	2.90	@ 3.25
News Sulphite	2.55	@ 2.80
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	2.75	@ 3.25
Soda Bleached	4.00	@ 4.25

Domestic Rags

New Rags

Prices to Mill. f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.50	@15.25
New White, No. 2	8.00	@10.00
Silesias No. 1	10.50	@11.50
New Unbleached	14.00	@15.00
Washables	6.50	@ 9.25
Fancy	9.75	@10.25
Blue Overall	10.25	@11.25
New Blue Prints	7.50	@ 8.50
New Soft Blacks	5.75	@ 6.20
Mixed Khaki Cuttings	5.75	@ 6.25
Pink Corset Cuttings	10.50	@11.00
Pink Muslin	10.25	@10.75
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	6.25	@ 7.25
Men's Corduroy	6.25	@ 6.75
New Mixed Blacks	4.00	@ 4.50
Old Rags		
White, No. 1—		
Repacked	6.50	@ 7.50
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.50	@ 5.00
Miscellaneous	4.00	@ 4.50
St. Soiled, White	3.00	@ 3.50
Thirds and Blues—		
Repacked	4.00	@ 4.25
Miscellaneous	3.25	@ 3.50
Black Stockings	4.00	@ 4.50
Roofing Rags—		
Cloth Strippings	2.40	@ 2.50
No. 1	2.40	@ 2.50
No. 2	2.30	@ 2.40
No. 3	2.00	@ 2.25
No. 4	2.20	@ 2.30
No. 5A	1.80	@ 1.50

Foreign Rags

New Light Silesias	9.50	@10.50
Light Flannelettes	11.00	@12.00
Unbl'ched Cottons	14.00	@15.00
New White Cuttings	14.00	@15.00
New Light Oxfords	10.00	@11.00
New Light Prints	9.00	@10.00
New Mixed Cuttings	4.25	@ 4.50
New Dark Cuttings	4.00	@ 4.25
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.25	@ 8.25
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.75
Ord. Light Prints	3.75	@ 425
Med. Light Prints	3.75	@ 4.25
Dutch Blue Cottons	4.00	@ 4.50
Ger. Blue Cottons	4.00	@ 4.25
Ger. Blue Linens	425	@ 4.75
Checks and Blues	3.50	@ 3.75
Linsay Garments	2.45	@ 2.50
Dark Cottons	2.35	@ 2.45
Shoppery	2.25	@ 2.35
French Blues	4.00	@ 4.50

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.15	@ 3.25
Domestic	3.15	@ 3.25
Wool Tares, light	2.50	@ 2.60
Wool, Tares, heavy	2.60	@ 2.70
Bright, Bagging	2.55	@ 2.65
Mixed Bagging	2.30	@ 2.40
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.85	@ 2.00
Manila Rope—		
Foreign	6.25	@ 6.75
Domestic	6.75	@ 7.25
New Bu. Cut	3.60	@ 3.85
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.40	@ 3.60
Hard, White, No. 2	3.15	@ 3.40
Soft, White, No. 1	2.70	@ 2.80
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag.	1.25	@ 1.40
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.70	@ 1.80
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.25	@ 2.40
New Cut. No. 1	1.75	@ 2.00
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	.70	@ .90
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.00	@ 2.10
News—		
No. 1 White News	1.85	@ 2.00
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.75	@ .85
No. 1 Mixed Paper	.55	@ .65
Common Paper	.35	@ .45

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.42	@ .45
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.56	@ .58

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(INCORPORATED)
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WASTE PAPER OLD RAGS WOOD PULP
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Various degrees of fineness and either fibrous or granular
Made from first growth Spruce and Pine, by approved processes.
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GENERAL CHEMICAL COMPANY 40 RECTOR STREET, NEW YORK

COMBUSTION ENGINEERING CORPORATION
PULVERIZED FUEL
45 BROAD STREET, NEW YORK

Finished Jute—			
Dark, 18 basis...	.30	@	.31
Light, 18 basis...	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.18	@	.20
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger.	.15	@	.17
Fine Tube Yarn—			
5-ply and larger.	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14	@	.15
Paper Makers' Twine Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Amer. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill			
All Rag Bond	35	@	40
No. 1. Rag Bon	25	@	35
No. 2 Rag Bond	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond	7	@	10¾
Sulphite Ledger	9	@	12
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5½	@	7½
No. 1 S. & S. C. Book	6	@	7¾
Coated Book	8	@	10
Coated Label	8	@	10
News—Roll, mill	3½	@	4¼
News—Sheets, mill.	3¾	@	4½
No. 1 Manila	4½	@	5½
No. 1 Fibre	4¼	@	4¾
No. 2 Manila	3¾	@	4¼
Butchers' Manila	3.60	@	4.00
No. 1 Kraft	5¾	@	6½
No. 2 Kraft (Southern Grade)	4	@	4½
No. 2 Kraft (Northern Grade)	4¾	@	5
Wood Tag Boards	4	@	6
Sulphite Screenings	2.75	@	3.00
Manila Tissue, 24x36 sheet	7	@	7½
White Tissue, 20x30 sheet	7	@	7¾
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	50.00
Manila Line Chip	57.50	@	60.00

Container Lined—

(Delivered Central Territory)

85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.15	@	3.25
White Envel. Cuttings	3.15	@	3.25
No. 1 Soft Shav.	2.65	@	2.75
No. 1 Mixed	1.45	@	1.50
No. 2 Mixed	1.15	@	1.20
Ledger and Writings	1.50	@	1.55
Solid Books	1.40	@	1.45
No. 1 Light Books	1.00	@	1.05
Blanks	1.90	@	1.95
Kraft	2.05	@	2.10
New Kraft Cuts	2.30	@	2.35
Manila Envelope Cuttings	2.40	@	2.50
Ex. No. 1 Manila	2.00	@	2.10
Print Manila	.90	@	.95
Folded News (over-issue)	.85	@	.90
Old Newspapers—			
No. 1	.70	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.55	@	.60
No. 2	.50	@	.55
Straw Clippings	.75	@	.80
Binders' Clippings	.70	@	.65
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	47.00	@	52.00
No. 2	45.00	@	50.00
No. 3	43.00	@	48.00
No. 4	41.00	@	46.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.10½
Rag Content	.17	@	.45
All Rag	.36½	@	.51
Writings	.08	@	.20
Superfines	.22	@	.50
News	.04	@	.04½
Book, Super	.08	@	.10
Book, Coated	.09	@	.14
Coated Litho	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.12
Manila, Sul. No. 1	.05	@	.05
Manila, Sul. No. 2	.03¾	@	.04¼
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.05¾	@	.05½
Common Bogus	.03½	@	.04
Straw Board	—	@	50.00
News Board	—	@	45.00
Chip Board	—	@	42.50
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	3.75
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White	.04½	@	—
No. 2 Soft White	.03¼	@	—
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.00	@	1.75
Writing Paper	—	@	1.50
No. 1 Books, Heavy	1.75	@	1.50
No. 1 Books, Light	—	@	1.25
No. 1 New Manila	2.50	@	2.60
No. 1 Old Manila	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.00	@	6.54
Old Newspapers	.70	@	5.54
No. 1 Mixed Paper	.60	@	.47½
Box Board, Chip	.60	@	.50

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	—	@	3.00
Domestic	—	@	3.25
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	2.25
Scrap burlaps	—	@	2.25
Wool Tares, heavy	—	@	3.00
Mixed Strings	—	@	2.25
New Burlap Cuttings	—	@	3.75

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1	.11	@	—
New Unbleached	.14¼	@	.15
Washable	.07¾	@	.08
Fancy	.10½	@	—
Cottons—According to Grades—Blue—			
Blue overalls	.12½	@	—
New Black, soft	.07	@	—
Khaki Cuttings	.07	@	—
Corduroy	.04	@	.05
New Canvas	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1	10.00	@	—
Repacked	9.50	@	—
Miscellaneous	8.50	@	—
White No. 2—			
Repacked	6.50	@	—
Miscellaneous	5.25	@	—
Thirds and Blues—			
Repacked	5.00	@	—
Miscellaneous	3.50	@	—
Roofing Stock—			
No. 1	3.00	@	—
No. 2	3.00	@	—
No. 3	2.50	@	—
No. 4	2.00	@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¼	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05½
No. 1 Kraft	.06¼	@	—
Common Bogus	.02¾	@	—
Straw Board	56.00	@	55.00
News Board	42.50	@	—
Chip Board	42.50	@	—
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope	4.75	@	6.00
Sisal Rope	2.50	@	—
Mixed Rope	1.00	@	1.25
Scrap Burlaps	2.25	@	2.50
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.75	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.75	@	—
No. 1 Mixed	1.00	@	1.10
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.75	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.25	@	—
No. 2 Books, light	1.00	@	—
No. 1 New Manila	1.50	@	1.75
No. 1 Old Manila	1.25	@	1.50
Container Manila	.85	@	.90
Old Kraft	2.00	@	2.10
Over issue News	.90	@	.95
Old Newspaper	.40	@	.50
No. 1 Mixed Paper	.40	@	.50
Common Paper	.30	@	.35
Straw Board, Chip	.60	@	.65
Binders Bd., Chip	.60	@	.65

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06½	@	—
Silesias, No. 1	.10½	@	.11
New Unbleached	.14	@	.14¼
Washable	.07¾	@	.08¼
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall	.11	@	.11¼
New Blue	.04	@	.04¼
New Black Soft	.06	@	.06¼
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.06½	@	.07
Corduroy	.04	@	.04¼
New Canvas	.08¼	@	.09
New Black Mixed	.05	@	.05¼

Old

White, No. 1—			
Repacked	6.75	@	7.00
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05¼
Miscellaneous	.04¾	@	.05
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.15	@	3.25
Black Stockings	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.10½	@	.12½
Light tinted	.11	@	.13½
Dark tinted	.12½	@	.15
Ledgers (sulphite)	—	@	.13
Ledgers No. 1	.36	@	—
Ledgers No. 2	.27	@	—
Writing	.09½	@	
Writing S C	.10	@	
News f. o. b. Mills—			
Rolls (carloads)	3.50	@	—
Sheets (carloads)	—	@	4.25
Sheets (2 tons or over)	—	@	4.60
Book—			
No. 1 M. F. (carloads)	8.00	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.50	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	29.00	@	30.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	80.00
Sulphate	62.50	@	65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.60	@	—
Soft White Book shavings	—	@	3.25
White Blk. News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	—	@	1.60
Printed Manilas	1.00	@	—
Kraft	2.10	@	2.10
News and Scrap—			
Strictly Overissue	.80	@	—
Folded News	.80	@	—
No. 1 Mixed Papers	.55	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto	Per lb.		
No. 1 White shirt cuttings	.14½	@	.14¾
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¾	@	.10
No. 1 Old Whites	—	@	—
Third and blues	.05½	@	.05¾